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Peruvian Bark.

This is one of the most important Articles in the Materia Medica. It is a medical Article wh was unknown to the old world before the discovery of America. It has been a question much agitated whether this discovery has been beneficial to mankind or not. It certainly must be so when we consider that to America, the old world is indebted for the Potato, the Guiacum, the Peru Bark, & the Ipecacuanha.

A few years ago just after the death of Linnous, there were only 2 Species of the Peru: Bark known – the Cinchona Officinalis & Caribea. The different Species now known are

1	Cinchona	Lancifolia	4	"	Ovalifolia
2	"	Oblongifolia	5	"	Excelsa
3	"	Cordifolia	6	"	Caribea

7 Cinchona Longifolia 12 " Floribunda
8 " Spinosa 13 " Brachycarpa
9 " Fonta 14 " Angustifolia
10 " Coccidifera 15 " Pitkinea
11 " Lineata

The Cinchona Lancifolia, is the Officinalis of Linnous, & was employed by Sydenham. It was used for James & Oliver Cromwell. It is called Lancifolia for the form of its leaves being smoothe & like a Lancet point. It furnishes the Pale Bark. It grows in Peru in S. America, on the lofty chain of the Andes. It is a lofty thick tree, thicker than a mans body.

Cinchona Oblongifolia. The leaves of this are broader, & the tree is of considerable size 4 & 1/2 feet in Diameter, & sometimes 160 feet high. It is a native of the mountainous Parts of Peru. This is the species wh furnishes us with the Red Bark. The common & red Bark are not the pro=

duce of the same Species

Cin: Cardifolia. Linnaeus confounded this with the Pale Bark. It was known in 1740. From this Species it is supposed we procure the Yellow Bark – this fact however is not well ascertained. –

C: Ovalifolia. It grows in the woods of S: America, near Santa Fe – The White Bark is procured from this Species. – The leaves are large & of a lively green

C: Excelsa of Roxburgh. The leaves are from 6 to 10 inches long, & from 5 to 10 broad. It is a Native of America but grows in the Philipine Islands. –

C: Caribea. Jacquin knew it in 1763. Wright afterwards discovered it. The tree is from 15 to 20 feet high. The Bark ash coloured & smooth

C: Longifolia. Of this we have nothing to say. –

C: Spinosa. It is a Native of S^d=

Domingo. —

C. Floribunda. This often Pukes & thus cuts short Intermittents. —

C. Pinkneia. This grows near Savannah, & is thus called by Michaux in honour of General Pinkney. It is a Species of the Cinchona. —

Observations

Mutis knows more of the P Bark than all the Physicians — he resides in S. America & is the Keeper of the Kings Bark Chests. — He informs us that its Virtues are greatest when taken from the largest trees, & that the Bark from the trunk is the most efficacious. (It is far inferior when taken from the largest trees, & that the bark from the trunk is the most efficacious) It is greatly inferior when taken from the Branches, or Small trees. — He also informs us, that the longer Bark is properly kept in chests, the more powerful it is. When recent, it Pukes & Purges, but

when dried, no such effects take place — This is precisely the case with our Dogwood. Large fragments of Bark are liable to spoil more than small, as there is more humidity in the former. The Experience of all Spanish Physicians have proved that the Bark shd be reduced to as fine a powder as possible

It was 100 yrs after the arrival of the Spaniards in So America before the virtues of the Bark were known to the Europeans. The Countess Cinchon being sick at Lima in Peru in 1638 was restored to health by the Bark — She gave it its celebrity by sending it to the Fathers in Jesus, & to the Cardinals at Rome (hence it is called Jesuits Bark) Louis XIV was at this time cured with it, & the Countess returning, spread its reputation. It was so much in demand that it became scarce even in Loxa in Peru. Linnaeus in honour of the Countess Cinchon, called it Cinchona, & this name

it will bear to the end of the world.
I did not say that the Europeans discovered the Febrifuge virtues of the Bark, I said the Indians directed them to it. An Indian who discovered it being thirsty of an Intermittent Fever, drank of the water in wh a Cinchona tree was growing, the great relief wh he obtained, produced two other attempts, wh entirely cured him. This however is hardly worth recollecting. —

The Bark when chewed, or the powder when dissolved, communicates a bitter, & a portion of Astringent taste to the Tongue. —
There has been no Analysis of the Lancifolia. The Oblongifolia wh furnishes us with the red Bark, appears from the Analysis of Saunders to be more Soluble in Spt Wine, & in water than the common bark, & to have more resin, more Astringency, & to be more Antiseptic. It turns a blue paper red; it precipitates lime water. The

Sulphate & Oxysulphate of Iron, does not strike a black colour with it. Seguin says it possesses a Gelatinous Principle, but Cinchonism can't arise for that, as, it is more abundant in Black pepper. It combines astringency with the Bitterness. There is some kind of Aromatic quality in it — the more Aroma, the less powerful is the Tonic. — The bitter & astringent principles combined, forms the most powerful Tonics. Its operation on the Stomach shews it to be entitled to the name of Tonic. — In Dyspepsia & Debility it is a most valuable Medicine. I dont believe as Cullen does that Dyspepsia arises for a loss of tone in the Muscular fibres of the Stomach, & that the Bark acts by increasing the tone. I believe it cures Intermittents by virtue of its Tonic powers, for bitters & astringents seperately will do this. The Bark induces a new action in the System —

We have mentioned in a former place that the Cinconism ct was detected in the Bark was supposed to give it its power. This opinion is ridiculous in the highest degree

I shall now speak of the diseases in wh Bark is beneficial, as well as of those in wh it is injurious. —

In Intermittent Fevers.

A question here naturally arises, at what period in the course of Intermittents, admitting of distinct exacerbations, ought the Bark to be administered? Boerhaave's rule was "Cum morbus jam aliquo tempore duravit" after the disease has existed for some time. — I say the bark shd be given as soon as practicable without waiting for a second Paroxysm, as the delay might occasion the death of the Patient. I here speak of pure simple Intermittents not attended with unusual & violent Paroxysms. In hot climates this is particularly necessary. Sydenham says

we must wait for the fermentation of the fluids to be over before we exhibit the Bark. This absurd notion of this great man arose from the Ancient Laws of Egypt wh prohibited any Purges for 3 days after the commencemt of disease under pain of death — He thot there was some morbidity evacuated during the Paroxysms of every intermittent. The followers of Stahl supposed the Bark did considerable injury by suppressing the excretions. The Bark may be given with safety at an early period in all Intermittents, & in some Tertians it must be exhibited at the first Paroxysm, or you will not have a chance for the second. Lind says the Bark ought be given as soon as possible after the first Paroxysm, & it appeared to me continued this author, that its early exhibition was never attended or succeeded by Dropsies or Jaundice — If this was not done, he found these Complaints often succeed. —

Sydenham waited for the repetition of Paroxysms, to permit the fermentation to go on, & Lind who gave the Bark in the first stages, was troubled with fever Dropsical & Jaundiced Patients — If the Bark be not given soon enough. I can readily suppose that these diseases wd occur. —

We find another question occurring wh is, whether the beneficial effects of the bark wd be increased by any previous preparation of the body? — Dr Cullen supposes that a preparation is not necessary. But to render the Stomach more fit to receive the quantity of Bark wh may be necessary, it may be proper to free it by a single ~~purge~~ vomit fm accidental indigestion, & to quite its activity before the Bark is thrown in. In another case also, continues the Professor, when fm the season & certain appearances you suspect a redundency of Bile, a Purge is proper. — In the most

simple Intermittents, those attended with inflammatory Symptoms, & wh arise from Miasmata stimulating the System; & also the Vernal & Autumnal Intermittents; in all these cases we shd delay the use of the Bark until V.S. & Purges have been used. I have been obliged to bleed 3 times before giving the Bark, wh had I not done, the Bark wd not have been retained, & if it had wd have proved injurious by stimulating the heart & Arteries to an increased action. Dr Cullen says, Emetics are proper in exciting the activity of the Stomach, this is far from being always necessary. If however it is to be done Ipecac: & Tart: Emet: are the best. —

Dr Home thinks the action of the Bark depends not only on its action on the Solid Stomach; but also upon its entering the Circulation — I think the Bark is taken up & carried into the Bloodvessels

After the Sweating Stage of Intermittents & Remittents, I urge the use of the Bark. A moisture of the tongue will also frequently authorise the use of the Bark. — It is more necessary in these than in Tertians.

In Quartan Fevers I have not much experience. — Dr Heberden recommends the Bark just before the expected Paroxysm, & says he, when given in this way, I have seen those of the most violent kind yield to it. This mode of exhibition in Quartans is better than in Quotidians or Tertians. —

The last general question involves us in another — May the Bark be given in the Hot Stage? Dr Clark tells us to pay no regard to the Remissions or Exacerbations — & we hear from Balfour that in 1767 he gave the Bark in the Putrid Intermittent & Remittent Fevers of Bengal, without consulting the Paroxysms, Remissions or Inter=

missions. And he adds further "It was of no consequence whether I gave it in Nocturnal or Diurnal Paroxysms" — His practice was successful. Many other testimonies of like nature might be adduced. My own sentiments are very different — I have however no experience on the subject, for I never intentionally made the trial — I have given the Bark just before the Paroxysm, & the pernicious consequences resulting from this practice have been quite sufficient to deter me from its exhibition in the hot stage. — There was only one Physician in this large City who ever adopted this practice.

However prejudicial this practice may be in this & the other States, we have authorities too respectable to induce a belief of its being equally prejudicial in Tropical countries — I suspect this practice is beneficial there. The Bark shd not be given in

the hot stage except the skin is considerably moist. — We find all who recommend the exhibition of bark in the hot fits, are writers on hot climates, & the skins are here hot & moist. Bark given in the hot stages in So Carolina w.d I think be more noxious than in colder states — Even a moist tongue is of much service. —

We have said that Emetics are not always proper — I do not assert however that they are always improper in Intermittents. On the contrary I think they are often beneficial. Emetics are best when there is a general torpor of the System, & particularly where there is a disposition to Diarrhoea. I suspect that Emetics are peculiarly proper in the Intermittents of intemperate men. — In marshy countries & hot climates, purgatives as preparatory to the Bark are very proper — they evacuate the Intestinal canal more completely than Emetics. I generally give Ca-

lomel in doses of vj or viij gr. combined with XV gr. or ℈j of Rhubarb or xxiv gr. of May apple & iv of Calomel. I prefer the Rhubarb or May apple to Jalap, as the Jalap is more Nauseating. Preceding the Bark by evacuents, & particularly by Purges has several decided advantages, as it keeps the Bowels open & discharges the Bilious matters. When in Bilious Fevers I am afraid to give the Bark alone, I combine it with Rhubarb; & this practice I recommend to you in all doubtful cases. Its Purging is no objection. —

Obstructions in the Viscera has also been supposed to be another case in wh. the Bark is forbidden. Cullen says as a general rule. It is very improper, for its astringency is but little, & bitterness is supposed to possess an Aperient power. He carries it rather farther than we ought in our Climates. — Where inflammatory symptoms attend, it is improper. — Combination with Arse-

nic is very proper & beneficial. In visceral obstructions succeeding Intermittents, large doses sh^d be given, & this is peculiarly necessary in that obstruction of the enlarged Spleen in Hot climates. —

When there are Intermissions & Paroxysms at what time sh^d the Bark be given? When the Bark was first introduced into Europe in the 17th Century, it was given a little time before the expected Paroxysm. This is directly opposed to Wolhock, who says when given just before the Paroxysm, it always increases its violence. Cullen says the nearer its exhibition is brought to the time of the accession of a fit, the better & more effectual. This I by no means approve of, I think it is highly improper, as it increases the violence of the ensuing Paroxysm, & the Stomach is frequently so irritable as to induce puking, & then we lose the good effects not only of this, but of the preceding doses. Where the intermissions are

very short & of a dangerous kind, this practice wd be very proper, for some Tertians consist of but two Paroxysms before death. —

Dr Home agrees with Wolbeck in directing the Bark after the hot fit has gone off — Here the testimony of two Physicians in remote parts of Europe corresponds

Hitherto I have been speaking of simple Intermittents; but in hot climates or in hot weather in cold climates, they are most violent — the breathing is Stertorous, the pulse is full strong & slow, at times Intermitting & Remitting. They originate from common causes & are true Apoplexies. — During the Intermissions these Symptoms cease, but in the Remissions the patient looks wild & has a dilated pupil — he is sleepy & is just like a hibernating Animal. — I have seen this Soporose Intermittent in Philadelphia. One case was a Tertian, tho' the Patient was Apoplectic during the

Apyrexia. Bark is peculiarly adapted to this disease, but after the use of the Lancet & Purges. I have been surprised at its good effects, altho all 3 patients had been bled & Purged. The number of cases increased in a moist part of the City where much animal & vegetable putrifaction existed, & in an open winter. The Febris Lethargica, the Tertians & Quotidians, all depend for relief on the Bark. The Peruv: Bark is proper in Remittents & Intermittents. They arise from the same causes, at the same times, & in the same countries, & they often change from the one to the other. Earlier writers tell us we sh^d never give the Bark at the time of the Paroxysm of the Fever, & in no Fevers where there are not distinct remissions. In hot climates less Caution is necessary. —

Bark then sh^d be given in the Apyrexia, as far from the time of the expected paroxysm as possible; & if it can be avoided never

just before the expected paroxysm

In Quartans we are justified from experience to administer the Bark nearer the accession. —

In Typhus. This disease has been supposed to arise from a certain state of Human Effluvia. It arises from the same causes wh produce Intermittents & Remittents. Whatever be its Origin, it is constantly the result of a Stimulus producing a febrile state of the System. Its first Stage is always more or less Inflammatory as the Y: Fever & Intermittents are. In this stage of Typhus, bark will be prejudicial unless indeed it early shews itself in an intermittent form. As we find Bark our best med: in some stages of Typhus, I wd wish to inform you when to commence its use. In this you must be governed by the state of the Pulse & other circumstances. The evacuent plan shd first be followed. —

When the eyes are suffused, & the pulse full & strong the Bark must be thrown aside.

The British writers tell us that Typhus assumes a Continued form. In the cases wh I have seen there were always remissions; & these I caught at for the exhibition of the Bark. If there were remissions or sub-intermissions, I have found the Bark useful. Physicians who give the Bark indiscriminately in Typhus must do harm. We find at times a Delirium of the Phrenitic kind existing with a red or inflamed state of the eyes, indicating inflammatn of the brain. In the debilitated state of Typhus attended with a convulsive twitching in the Limbs, opium as I shall hereafter inform you is the Sovereign remedy. The British practitioners have marked the two Stages of Typhus, & they tell us in the first to withhold, & in the last to exhibit the Bark; but they have not sufficiently marked the Remissions.

In Malignant Y. Fever. In this disease I can say nothing of the Bark worthy of your attention. Physicians suppose it prejudicial in a Majority of cases. It had a fair trial during our Y: Fever, & if it were to occur again, the Bark wd be one of the Med: I shd discard. It has been used with Success in some stages, & we find it recommended in So America

In General Pestis. I have never seen it except in Our Y: Fever, & the Typhus wh are indeed nearly allied to it. The Plague, Typhus & Y: Fever, are the same common Species altho' called by different names. Bark was used in the Plague at an early period, we find it recommended in the 17th Century by the Med: Faculty at Naples. Mustin says that the Plague at Moscow was increased (or rather its bad effects) by the lancet, & in the Nervous Stage, bark was pre-eminently useful.

The Phrenitic stage of Plague so common in other Countries, do not occur at moscow. Dr Haen says that the Plague at Vienna yeilded to acids; & the Dutch Consul at Smyrna told him, that large & repeated bleedings with mineral acids & Bark formed the best mode of treatment. Dr Mc Thenie, who resided 30 years at Constantinople tells us that in some cases he used the Bark with the greatest success & thot that the chief dependance in the cure was to be placed in that medicine

Ramazani in 1693 used the Bark with success in Petechial Fevers. —

In Synocha Fever. This is Cullens Genus of Fevers. He supposed it originally from cold. But it arises from the same causes wch produce Intermittents & Remittents. — In the Inflammatory state bark must be highly injurious. This fever attends all the Phlegmasial, & the Bark is not admis-

sible except under certain Circumstances. All Physicians have agreed in rejecting the Bark here, until lately, when we find it advised. —

There are some inflammatory diseases of the Remittent kind, in wh we find Bark to be our best remedy. Senac gave it in the Inflammatory Pleurisy. —

Forti forbids Bark in all Primary Inflammatory fevers; but he says it is beneficial where Inflammat^n is only a Symptom of Intermittent fever. —

In Dysentery. The employment of Bark in Dysentery is not a new practice Morton used it. — This complaint arises from the same causes wh produce Remittents & Intermittents, & it is nothing more as Sydenham has well expressed it than "those Fevers thrown in upon the Intestines." — Cullen says when the disease is of its proper nature, that is, depending chiefly upon

a Constriction of the Colon, & frequently in its beginning attended with some Phlogistic Diathesis, the Bark must be injurious; but continues the Professor, in the advanced state when the Symptoms of Putrescency appear; or where the disease has changed in some measure to Diarrhoa, the Bark may possibly be employed with advantage. — He says when it assumes the Tertian type, the Bark is absolutely necessary. I have seen the Dysentery in its true Intermittent form assuming the Tertian or Quotidian Type, & have used the Bark with great advantage, but accord^g to Morton, only in the Intermissions. It has been said that the Bark sh^d be used in all the violent Symptoms of Fever. I wont absolutely discard the assertion, but it is a dangerous opinion to hold. —

I formerly said it was improper to em=

employ astringents in the beginning of Dysentery, & that a little fever was kept up by Habit. In Southern Climates, the low stage always calls for Bark & Opium

In Acute Rheumatism. The English Practitioners strongly recommend the Bark here. An eminent Practitioner in this City informed me he always found it injurious. Saunders tells us he always used the Bark with great success, but preceded its use by general & Topical V.S. Morton after bleeding employed it in the Intermittent Rheumatism. Jno Hogarth says that the Bark is the most certain remedy in the cure of Rheumatism, he adopted this practice fm Fothergill, & says out of 121 cases, he found only 14 wh did not yeild to it. — In Rheumatic affections of Joints, Bark has been exhibited during the Intervals of ease — Haygarth gave v, X or XV grs every 3 or 4 hours, with the

most Sedulous attention never to give more than will agree with the Patient — The Pains, swelling &c he tells us speedily yielded, & there never was produced any thing like Chronic Rheumatism, on the Contrary it prevented it. He supposed Bark was effectual in Dysentery, as Mercury is in Syphilis. We must receive the Opinion with some allowances. But this disease is marked by exacerbations & Remissions, & no doubt in some cases, the Bark is an important remedy. Rheumatism assumes the Remittent form more generally in England than in America Bark is useful in the Rheumatic Affections of Marshy Countries — I have found it eminently useful in Rheumatic affections of the head approaching to those of the Phrenitic kind, & Bark has triumphed where V.S & Blisters have failed. I have used Bark with Evident advantage in

the most acute Rheumatism, but after I have bled & purged

— Rheumatismus Hystericus of Salvault. In this Bark is more useful than any other Medicine. It resembles genuine Rheumatism. I have never seen it. I have directed yr attention to it, only on acct of Cullens Pernicious notion concerning it, for he objects to the bark because the Blood when drawn has an Inflammatory Crust — Now we know the Bark to be proper when the Blood assumes this appearance, as in Gangrenous affections &c. I have seen the Blood when drawn in the Y: Fever & Remittents assume no inflammatory crust whatever, & notwithstand^g the Bark w^d have been very pernicious. There appears to be a great similarity between Gout & Rheumatism yet there are distinctions. — We hear the Bark advised in Gout by Sydenham. Dr H — calls it a

divine remedy. Forti (whom I always mention with respect) did not find it beneficial. In the Intermittent fever for Gout, with irregularities & extreme debility, bark may be proper, but it is a nice business as you may cause a translation of the disease. I have had the translation in remittent Gout from the feet to the Chest. Bark is proper in the Apyrexia of common Intermittent Gout. In Gouty Asthma in the shape of an Intermittent, I have found Bark useful, & have prevented the disease. Bark will transfer the Gout from one part of the body to another, & is scarcely ever safe. Dr Small gave 1 Qr of Tart Emet: to ℥j of Bark, & directed Barley water to be drunk. – There are two diseases of the head

Hemicrania & Cephalgia wh return every 3° day, & originate from the same causes as Remittents & Intermittents do, in wh Bark is very useful. When the Pulse

has been full, & the constitution Plethoric I have known it yield to Bark when Vf Blisters & Arsenic have failed. Bark is often the only remedy; yet there are circumstances wh forbid its use. I never ventured upon it while the affection was present for instance

The Hemicrania affects only one side of the head, & returns periodically. It is generally, but not always derived fm Gout. Mr Latrobe brot it on by washing the swollen parts (wh was caused by Gout) with the Acetate of Lead. The Bark is our sovereign remedy, & it shd be given in the Intermissions, never during the Paroxysms. In these cases I always combine the Bark & Valerian together. I may remark here that all our diseases have a periodical tendency. We see it in worms, periodical affections often occurring from them.

In Cholera Morbus. The lancet is at times necessary here, but I believe the greater number of cases forbid it. The Cholera Morbus yields most readely to Opium & diluents. It is sometimes Periodical. As we find Bark recommended in Intermittents, Dysentery, Fevers &c. so we may suppose it has been advised here, & accordingly we find it recommended by Cleghorn. The fever he says is at times Quartan, but generally Tertian, & the Bark ought be promptly & largely given. I have no experience on this subject. I am of opinion that no febrile disease of 3 days duration exists without putting on a Tertian Type.

In Pneumonic Affections. I conceive it to be unnecessary to prove that Bark in these cases is prejudicial. In some diseases similar to Pleurisy, & what is vulgarly called Pleurisy of the Head, a disease originating in the marshy countries of Delaware & Jersey, Bark has been found very good. The

complaint arises from the same causes as our Intermittents & Remittents do. The disease is often Remittent attended with debility & a Hectic state of the system. I think when it arises from intemperance, bark is peculiarly adapted to it. It is ushered in by a chilly fit, the pain in the head is not constant but comes on periodically. At times it is on the sides. Pneumonic cases are never continued but always either Remittent or Intermittent. The Putrid Pleurisy wh we have already spoken of is always increased by V.S. The Pulse here is a most treacherous guide, for while it induces us to bleed, it calls for the stimulating plan — One bleeding or one Cathartic will at times sink the Pulse so low, that Serpentaria, Wine &c are unable to raise the system — So great is its prostration. Blisters near the seat of the pain have been found useful.

Dr Mc Kenzie of Jamaica found that

a number of his Patients in this disease died, in fact all that he was called to. He, guided by the pulse had used the Lancet, nor did he meet with success until he used the Bark & other Stimulating Med: after wh he never lost a patient. The Miasmata from a large pond of Stagnant water produced the disease in this instance. Perhaps Dr McKenzie's patients being negroes might not have borne bleeding so well, as their diet was low & feeble. I formerly spoke of this disease when treating of Serpentaria. —

Percival describes a Pleurisy returning every other day, on one day it was very violent, on the next there was none at all, being a true Intermittent Pleurisy. Dr Home says if the Bark is not successful here, either Pulm: Consumptn or Death is the Consequence. It is adapted to a Majority of cases if it assumes the Intermittent Type. As it approaches the Tertian Type, it

is more safe. —

In Dropsies. Where there are great intermissions, delays in the exhibition of the Bark are dangerous, as every Paroxysm increases the Dropsical swelling. The fevers producing Dropsy generally assume the Tertian form — On one day you wd suppose tapping necessary, on the next you find the Patient lank. On one day there is much fever on the next there is none at all. I succeeded in the cure of this kind by Bark & Calomel, giving no Diuretics, & just attending to the Original disease (an Intermittent) at the same time sedulously watching the Intermissions & Paroxysms. Dropsies are often the result of Intermittent fevers; when they assume the Tertian Type, Bark is highly advantageous. —

In Hydrocephalus Internus. Bark is sometimes beneficial in this disease. At times it is a true Intermittent & sometimes Remittent

I regret I have never tried it. The Periodical Headaches of Adults, so nearly allied, yeild to the Bark & we may infer this wd. Altho' it is a nice business, I Iwd not advise it unless I thot you wd be very cautious in its exhibition. The affections of the head were in one instance moderated by the Tonic Plan, & the exacerbations in the afternoon rendered less violent. Bark however is to be used only in those affections wch are truly periodical, being either remittent or intermittent

<u>In Phthisis Pulmonalis</u>. As the first stage of this disease is attended with a Phlogistic Diathesis of the system, so the Bark must be injurious. Cullen says it is hurtful in 9 cases out of 10. Warren rejects it but for no other reason, but because that in 15 Patients bled by Dover, the blood in all of them was sizy. Bergius asserts that there are no bad effects from its use, altho' there is an

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inflammatory crust. Morton says it checks the Putridity of continued Fevers approaching to Hectic. Van Swieten recommends it He gave 3 or 4 tablespoonfuls of the Decoction to an Adult, & did not find it to increase the heat of the System. Fippot is one of its greatest Eulogists. & he found it best in those cases where the Patient had been labouring under Intermittents, wh by the by, are the most frequent causes of Consumption. —

Cullen says Bark may be used with success in Phthisis, when the exacerbations of the Hectic is marked more or less with a cold stage, & regularly at certain periods, commonly Quotidian, but sometimes Tertian — I met with a Hectic Fever wh in the afternoon was ushered in by a chilly fit, & the exhibition of the Bark in preventing the violence of the chill far exceeded my expectations. I believe the life of my Patient was protracted by its use. In a Spe=

cies of Phthisis best described by Murray & Goldenburgh, in wh the Patient rejects by Coughing a saline sweetish Mucus, not possessing the same Fetor as in genuine Consumption of the Lungs. Hepham recommends a decoction of the Bark in combination with the Guiacum. Murray says Bark is the best remedy. This disease is more common than is generally supposed — it is often easily cured, & differs from Consumption. When Tubercles are formed in the Lungs, the disease is incurable. Sydenham alluded to this Catarrhal Consumption, & it was that in wh he advised riding on Horseback. Mr Rittenhouse was afflicted with this disease, & as he was unable to take Bark he obtained relief by Columbo. When Tubercles or Carbuncles exist in the lungs they are not dissolved by bark — & as inflammat^n always exists, the Bark must consequently be prejudicial

than

There is a disease complicated with Fever; I mean a certain Catarrhal affection distinct from Consumptn in wh we always find a Phlogistic Diathesis, here Bark must be hurtful! But says Cullen there are two cases in wh the Bark may be administered, the one is when the Catarrhal affection is combined with the Intermittent Fever. And I have often observed continues the Professor, the most frequent & violent fits of Coughing, to be joined with the Paroxysm, & particularly with the cold stage of such Paroxysms, in wh cases I not only have recourse to the Bark, but fly to it with the greater haste.

The other case is those habitual & frequent returning Catarrhs wh depends upon a weak & imperfect perspiration, & this again upon a weaker force of the Heart & Arteries.

The quantity of matter discharged by the lungs is in proportion to the quantity of perspiration obstructed. I think Cullen has

himself. -

been rather too liberal in his recommendation of the Bark. —

In Hemorrhages of Red Blood

I formerly mentioned the division of Hemorrhages into Active & Passive. This distinction ought be constantly kept in view, for if the Hemorrhage be active, the Bark must be certainly injurious. Hemorrhages are most frequently of the active kind, as in Epistaxis &c. Cullen says Hemoptysis being an active Hemorrhage, bark is hurtful. Some writers recommend it. Morton calls it a Herculean remedy, as it arises says he from a vitiated state of the blood & humours. Hoffman speaks of its efficacy, but at the same time acknowledges that he has no experience on the subject. I agree with Cullen that Bark is prejudicial in Hemoptysis. I certainly never would prescribe it without it was periodical, & then I think we might find better remedies. —

Authors disagree strangely in their accounts, but this arises from the situation of different Countries, & from the variation in Climates undergo. I suspect Pulm: Consumption was attended with a less Phlogistic diathesis, during the Reigns of Charles the 2d & James than they are now — Hence the greater efficacy of Bark then. But to return, passive Hemorrhages occur at the decline of certain Fevers when they do exist — as in many cases of Scurvy. —

Menorrhagia contrary to the opinion of Dr Cullen is an active hemorrhage hence Bleisters & Digitalis are useful. We find Bark beneficial in Uterine hemorrhages depending upon a laxity of the vessels of the Uterus. The species of hemorrhage viz Bloody Urine, has yeiled to the Bark. It arises either from the vessels of the Kidnies or the bladder. When from the last, the hemorrhage is more active than from the first. I have used the Bark combined

+ two

with lime water in both cases. —

In Scurvy. Lind entertained a high opinion of the Bark in this Complaint; but he said the stomach wd not bear it well. In the 2d vol: of the Medl Transactions of the Physicians in London, we find an acct of 2 cases wh yeilded to the Bark. It is often good & shd be used with animal & vegetable food. The powder of the Bark is the best preservative of the Gums. Scurvy is often cured by animal food. This tho' contrary to the general opinion, is no less true. It is often as effectual as Vegetable food

We come now to speak of more complicated Fevers, & first those of the

Exanthematic kind. They are of an Inflammatory nature, & have a tendency to run into Typhus. They are also attended with a putrid Diathesis. While Inflammatory Symptoms exist, I need not tell you Bark is improper — But there is

often great debility, when the bark under certain circumstances is an important remedy. It has been used in the Eruptive State of Small Pox, on the supposition that it wd favour Suppuration. Cullen suppo- ses this never necessary - he says the dis- tinction between the inflammatory stage of S. Pox & the Putrid Diathesis shd be carefully attended to. In the last he ad- vises Bark. (Cullen supposes the Bark never necessary; he says the distinction be- tween the inflammatory stage of S. Pox & the Putrid Diathesis shd be carefully at- tended to. In the last he advises Bark.) Cullen supposes the Bark never necessary to produce Suppuration. I differ fm him in this respect, for there are circumstances of time & place wn cn require it. In Alleys & confined situations we find the Bark necessary to produce suppuration, for a cer- tain febrile state of the System is necessary

to the production of this Suppuration, wh tho generally present, is however sometimes absent. When this febrile state of the System already exists Bark must be injurious, but frequently the S. Pox fm inoculation, or in the natural way takes place in a System so feeble, & with a Circulation so languid, that at the time the Eruptive Fever shd appear, we find none, in wh case bark is necessary to rouse the force of the Circulation, & produce this beneficial fever. —

Measles. This is an inflammatory & exanthematous disease, & generally calls for the Lancet. I have seen a few cases in wh it was not necessary, & have bled children several times before I could reduce the pulse. In this disease there is Inflammation wh sometimes lays the foundation for Phthisis & Hemoptysis, so that we are certain bark has nothing to do with its cure

Sir Wm Watson tells us he found Bark

beneficial in the Putrid Measles. The hoarseness wh attends this disease wd appear to require the Antiphlogistic treatment but we often find Bark & the Preparations of Iron the best remedies

In Erysipelas. Bark has been used here. It is an Inflammatory disease, & the Putrid Diathesis seldom appear. It however assumes opposite degrees of violence. At one time when it has affected the head & face violently, I have bled & Blistered at another I have used Tonics.

There is a disease called

Pemphigus, wh is an Inflammatory Erysipelas affecting the face neck & Back. Blisters & the Lancet have been found very successful — It is nothing else but a symptom of common Erysipelas, at times running on to Typhus. Two kinds sometimes appear, one in the shape of Debility inclined to Typhus forming what Fordyce calls the Putrid Erysipelas

Fordyce says ℥j of Bark every hour is the best remedy. Dr Cullen says it is inflammatory, & no putrid diathesis ever appears. — Other Physicians make the same observations. The London Physicians agree with Fordyce in asserting that it is of a putrid kind, requiring the Bark & forbidding the Lancet. In one part of the Island, we find the disease of Erysipelas yields only to the Lancet & Purges. In another (viz London) part we hear from Dr Heberden that Purging will destroy the Patient. He allows it to be necessary however in some cases. He says he has found even bleeding at the nose to augment the disease. —

Erysipelas appears in 3 Shapes. The
1st scarcely meriting attention. The
11d with a high inflammatory fever requiring Bleed.g Purging & Blistering
111d In the Shape of Typhus. —

In Scarlatina. In those cases verging on Gangrenous affections Bark has been used with much advantage. Withering, who has given us the best account of Scarlatina, never found the Bark beneficial. There are cases of Scarlatina however, in wh Bark is proper, as when there is a tendency to an ulcerous affection of the Throat. —

In Scrophula & Rickets. Both depend on a laxity of the System. But in the Florid Species there is not much of it. That there exists a connection between the two diseases is extremely doubtful, we find Scrophula existing among the Indians, but the Rickets never. Fordyce, Fothergill, & Bond, have recommended it. Donald Monro strongly advises the Fixed Alkali, either alone, or in combination with the Bark in Scrophula, & indurated Swellings

In Cancer Bark has been advised here. — But I have no experience on

this subject. It has been generally combined with Hemlock, & Dr Shippen used it with advantage in Ulcers, apparently Cancerous.

In Spasmodic Diseases. these often depend on a weakness of the tone of the system. In such cases Bark has been advantageously employed. Epilepsy depend^s on a certain organic affection of the Brain can be cured by no remedy, but at times there is a Plethoric State of the system with a turgescence of the vessels of the brain, in such cases I wd advise you against the use of the Bark. When it depends on a Mobility of the System; Bark may be found Good; but says Cullen "I have hardly ever found it so, I am of Opinion that the Fossil Tonics are more powerful" Wilkock says he used it with advantage; he gave ℥ss combined with one or two drops of the Cajeput. This is an Oil wh in odour resembles Camphor

& Turpentine mixed, it is somewhat Bitter & extremely Pungent. It is used with the Bark in Chincough & Epilepsy. The Oil is extracted from the leaves of a small shrub (the Melaleuca leucodendron of Linnaeus) wh. is odourous & fragrant. Humboldt first brot it from Java. It grows in the East Indies. Rosentine used it. It being unmixed it stands alone among the Distilled Oils, & is of a green Colour. —

Tetanus. I have no experience of the Bark in this Complaint. I know it is often excited by stimulating narcotic vegetables. The Stramonium particularly. The poison of the Rattle snake has produced it. Tetanus is supposed to be a disease of debility, but the first stage is sthenic, & I cured one case by Purg.g & Bleed.g Too much I think has been ascribed to the Bark in this Complaint.

In Chorea. This depends upon a

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certain State of Mobility occurring at particular periods. Cullen thinks that the preparations of Lime cannot be employed long enough to be advantageous, & agrees with Wolthock in advising Bark. Sydenham advises Evacuations. It commences with a full & plethoric State of the System, & I have known the lancet to cure it. The Tonic Plan has in some cases seemed to do harm. Hamilton advises Purges.

Case of Dr Knox who could take his seat in the University or at a Ball, only after large doses of Bark.

In Chincough Bark has been recommended here. Cullen conceives its exhibition to be injurious when the disease is recent.

Hooping Cough is often Complicated with Intermittents or Remittents, & we also often find the febrile Symptoms running

hiffs. I have frequently bled with advantage. In two cases wh came under my care, one terminated in Dropsy of the Brain, the other of the Abdomen. The last was cured by Crystals of Tartar. In the Epidemic Whooping Cough wh happened at Gottenburgh, the Bark is said to have been Beneficial. Morris combined it with Castor. If given at a proper time that is, during the Intermissions & Remissions, I have no doubt it may be good. But children will not take Bark. Harris applied Bark & Castor to the Stomach in the Hooping Cough

<u>In Asthma</u>. There is often a Congestion of the B'vessels of the Lungs, or it is connected with a Plethoric State of the System. Here the Bark must be injurious. But at times it depends on a peculiar Mobility of the System. What Floyer calls Hysteric Asthma, the Paroxysms returning periodically in the Morning, there is no dif=

ficulty of Breathing, in the afternoon it returns. — In these cases Bark may be beneficial. -

In Angina Pectoris. Bark has been recommended in this Complaint it shd be used however with great circumspection. I have cured 2 or 3 Cases by the Sweet & Foxglove -

In Hysteric Affections. Proper Hysteria is often connected with a Plethoric State of the System. There are many nervous affections however called Hysterical, in wh Bark is proper. Bark & Aromatics are used with advantage in deep Melancholia attended with a relaxed State of the System

In Jaundice. This often depends on Stones in the Biliary Ducts, wh falling out at the time of the exhibition of the Bark, has contributed perhaps to its Celebrity. It may be useful by its Purgative Quality. Does it not at times de-

pend upon a weakness of the Alimentary Canal? If it does, Bark in this case must be proper. When Gve an Intermittent more hereafter. —

In Fluor Albus. It is serviceable if persisted in for some time. It seems advisable in some cases of Abortion. We have seen that Tormentilla ut is so nearly allied to it is beneficial. —

In Gangrene. This is either preceded by or without Inflammat^n. It is but until lately that Physicians have attended to the inflammatory action, formerly directing their attention to the weak stage only. — Bark is improper in the first stage of Gangrene, but when there is a loss of tone in the whole, or in a part of the System, together with a languid action, bark is beneficial. — Also in Nervous & Typhus Fevers. —

Bite of the Viper. There is no Stim-

ulant more powerful than the bite of the Viper or Rattlesnake. It completely destroys the Organization of the part; & Bark must be injurious

External Application of Bark:

It is sometimes useful. It was resorted to directly after the discovery of this Med: in the 17th Century. Helvetius recommended it. Since him Tode, Wolhock & Van Swieten. Lind tells us he cured Intermittents by its external use. Rosenstine applied a poultice of it with wine to the body. It is quilted in with Linen & applied in the form of a Jacket. I have seen its beneficial effects & recommend it to yr attention, particularly when unable to give it internally. When the Jacket has not been taken off after the chilly fit, it has been found to increase the succeeding Paroxysm. Acts on the Solid System, or thro' its medium-

& the finest powder shd be used. Jackson informs us that its external application increases the heat of the body & force of the Pulse. —

— Bark cures Intermittents in 99 cases out of 100, wn mercury will not. There are however some constitutions wn calls for Mercury, & in wn Bark is of little or no advantage. Mercury by its salivating effects often prepares the way for the Triumph of the Bark = the powers of the Bark are enhanced by Combination with many Articles. Its combination with Serpentaria is common in Europe & in the U States, with Valerian it is peculiarly adapted to Hemicrania & other similar affections. Bark combined with Camphor is much more efficacious. In Typhus, Jail Fever &c a small portion shd be used say 8 or 10 grs to ℥ss. I have experienced the Benefits of this Combination. Bergius gave it in

obstinate Intermittents tending to Typhus ℥ss of the Bark to 8 or 10 grs of Cayenne Pepper.

We find it advantageously combined with Cajeputin Epilepsy. We also find it profitably combined with Castor. And in Typhus with the Vol: Alk: – The union of the Metallic Tonics (the preparations of Copper & Iron) greatly increases the powers of the Bark. – The combination with Rubigo Ferri in obstinate Gleets & Dyspepsia has long been my favourite medicine. In Intermittents we often find the Sulphate of Copper renders the Bark more efficacious.

Arsenic imparts considerable additional vertues to the Bark in Intermittents. – Lind used the Bark in combination with the crystals of Tartar, or Cream of Tartar with much advantage in Intermittents. I think when we apprehend danger from its Stimulating effects, & where its use is ambiguous, this of Linds is an advantageous

Vol 2.

combination, for the same reason I formerly recommended Rhubarb

In Dropsies, either Ascites or Anasarca, or Hydrothorax returning Periodically it has been recommended. this last I have just seen. —

"Ea vida salus morientibus una"

X

Angustura. —

This bears a greater resemblance to Serpentaria Hascarilla than to P: Bark. this is a recent acquisition to the Mat: Med: It was brót in 1788 by different ships fm the W: Indies to Europe, & was then thót superior to the Peruv: Bark. It is a native of S. America, & receives its name fm a very trifling circumstance viz: its being found in a narrow Pass. We do not know the vegetable wh affords us this med:. Baron Humboldt informed me it was not a species of Magnolia as I

that but a Species of the same Genus as the Bark.

Properties. Its smell is unpleasant, its taste is Aromatic, & very bitter, leaving a sense of heat & pungency in the throat. The powder resembles the Indian ~~Turnip~~ Rhubarb. It is used in infusion & decoction. The rectif^d Spt. Wine extract its virtues. It contains scarce any astringency. 20 gr^s is the dose for an Adult. ℥ss of the bruised bark is added to ℥16 of boiling water, & by some given in that form. —

Angustura Mixture. —

Cortex Angustura — —	℥ij
Orange Peel — —	℥ss
Spt Lavander — —	℥ss Mt

Dose ℥ss. —

In Sporadic Dysentery. In this & in Habitual Diarrhoea, the London Physicians have used it. It has been much used in Intermittents & Remittents — the powder given in doses of 10, 15, or 20 gr^s. In the com-

mencement of Intermittents I think it prejudicial. In low irregular nervous fevers it is proper. Brand thinks it better adapted to some cases than the P. Bark, as it does not run off so soon by the Bowels. — He used the decoction alone, or in combination with some Aromatic. It has been found beneficial in Gangrenous affections of the throat, in Ulcerous affections also, & a species of Angina with a Scarlet colour. Dr Pearson says in diseases of the stomach, it is superior to any other vegetable bitter. Its tonic powers are certainly far inferior to the Bark. —

In Chlorosis & Obstructed Menstruation, with a languid Circulation, our med. has been very beneficial. —

In Pertussis. The British Practitioners recommend it. It cannot be proper in every stage. Before the use of Evacuents & Emetics, I apprehend it must be prejudi-

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cial. Where the Complaint is kept up by the powers of habit, & the system weak, I have no doubt it is serviceable. In some cases the Angustura is preferable to the Peruv: Bark as in Mania, & the diseases of children; it is less liable to run off by the bowels, & disagrees less with the Stomach. — On the whole, it is a Med: of Considerable powers, & a most valuable Article. —

Magnolia's

There are 6 or 8 species. Magnolia Tripetela - native of the U States & the W: Indies. — Magnolia Acuminata or Umbrella tree. — " Glauca. —

The Magnolia Tripetela is Bitter, aromatic, & possessed of much Astringency, & nearly allied to Angustura. It is adapted to the low state of Typhus & such Intermittents. —

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In Inflammatory Rheumatism, after bf it is used with succes. It is a good sudorific. It is much employed in the Western country. It has the smell of Mercurial Ointment, & is not inferior to Angustura. —

The Glauca is the most common. — See Collections for further information

Magnolia Acuminata.

It is said to cure Rheumatism Zij of it is digested & strained. The Tincture however is not the best mode. —

Silicodendron Tulipifera

This is used in Virginia to produce sweating, for this purpose, a leaf dipt in Milk is to be bound on the Part. Dr Condy tells us it must be always dipt in Milk. Both possess similar Vertues

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I have been accustomed to dwell on these Articles. but as I can refer you with Confidence to Dissertations on this head - I leave the subject with less regret. —

Under this head I wd mention the Populus Tremula - Aspen Tree. It has been used in Intermittents. It is an excellent Tonic, & certainly merits our Attention. —

Wild Cherry Tree. —

The Bark is bitter & astringent, with some aromatic Qualities. The flavour is very similar to Peach Stone Kernels. It possesses a Narcotic Quality, & is a Stimulant. The Bark is more powerful than the Stem, & is very advantageously employed in Intermittents. It is said to possess Anthelmintic Qualities. It has been recommended in Dyspepsia Consumption & Lumbar Abscesses, attended with Hectic Fever. In Dyspepsia

it is eminently useful. I have used it with advantage in the 2° & 3° stages of Consumption. It relieves the Cough independant of its Narcotic Qualities

Salix Alba

The Light, or White Willow. The bark is powerful in proportion to its age. In Tanning it is little inferior to the Oak Bark. The Oxysulphate of Iron strikes a black colour with it. Its Antiseptic qualities are greater than those of the Bark. The Bark & leaves have been recommended in the Gout, Hemorrhage & obstructions of the Viscera. I doubt if there are any singular Advantages attending its exhibition in Gout - perhaps much injury. Dr Stone tells us he cured 50 cases of Intermittents with it. Crolius gave it in Decotidians & Tertians. Cullen says the Salix alba may be a useful remedy. Bergius informs us he had no success with it

he gave i or iij — And here I may remark that Bergius has found many medicines inefficacious, wh — for the Testimony of many respectable writers, certainly possess great power. I suspect the Intermittents of Sweden, are of a peculiar inflammatory nature, for the nature of the Climate. Haller found it beneficial in Children. In Kamschatka they use it as bread, or rather as a substitute for that article. —

Salix Lalifolia, or Broad leaf'd willow.

Samuel Jones says it is superior to the P Bark

Esculus Hippocastanum

or Horse Chesnut

This species is not a native of the U States altho' it thrives very well here. But we have two native species. The Esculus Pavia of Linnous, & Esculus Flava of Aiton.

this Species was brot into Europe in the 16th Century. The dried root has been used as a Sternutatory in cases of obstinate Headaches & Ophthalmia's. The Bark has been used in Intermittent fevers. Dr Cullen found ℥j/ss or ℥ij to cure, & he thinks it can be used with great propriety as a substitute for the Bark. Dr Crespon cured 12 cases by it.

Swietenia Febrifugia. —

So named in honour of Van Swieten. It is a species of Mahogany. As a substitute for the Peruv: Bark, its tonic powers are certainly inferior. Roxburgh strongly recommends it as a febrifuge. I have used it with advantage in Intermittents; but it is certainly not equal to the P Bark

+ Water

Cornus Florida — Dog wood. —

The dose is the same as that of the P. Bark. In 1804 it was extensively employed. The recent Bark is more disposed to puke & purge, than that wh has been kept for some time so as to become perfectly dry. — It is an excellent substitute for the Bark, as to its last effects, in that respect it is on a footing with it. In Intermittent fevers it has very justly derived considerable celebrity. It grows in every part of the U States, flowers in the Spring. It adds much to the Beauty of our woods. In Decoction it is perhaps better than the P Bark. — In decoction it is found a valuable remedy in the disease called Yellow, or Canada distemper & wh has made such ravages among the Horses in some parts of the U States within the last 10 years. It is very similar to the Senecia or red Willow. —

Cornus Cericea, Red Willow or Rose Willow. It grows in marshy situations. The Physicians used it as a substitute for the Bark during the war. It is said to be more powerful than the Cornus Florida; but the one is a large tree, this is a small shrub, & cannot afford a sufficient quantity. It is mixed with Tobacco & smoked by the Savages.

Upatorium Perfoliatum or Thoroughwort. It grows in moderately wet situations. The leaves stand opposite to each other. It is used in Intermittents. In a peculiar disease wh affected the young men on James River in Virginia, attacking their Testicles, this plant is said to have been peculiarly efficacious. A strong decoction was very good. Mr Jefferson ascribes its disappearance to the mineral waters wh are now used.

Metallic Tonics. —

These form some of the most valuable articles in the Mat: Med: We include under this class the preparations of Iron, Copper, Arsenic, Silver & Zinc

I pass over the Natural History of Iron, only observing that the Creator in his great goodness has most extensively diffused this article all over the world. —

Iron is one of the principal Metallic Tonics. Dr Cullen has very improperly arranged it under the head of Astringents. I have already given you my reason for placing it under the head of Tonics. —

There is a variety of the preparations of Iron — they may be divided into 3 Classes, but I shall not aim at a Chemical division — altho' I shall

be somewhat methodical —
To the 1st Class belong the Limatura Ferri or the finest part of Iron filings. the Ethiops Martialis — the Crocus Martis or the Calx of Iron corroded by fire, & the Rubigo Ferri. —

To the 2d Class, including those preparations of Iron made by acids, belong the Tartarus Martialis (the dose from 10 gr to ℥j) — the Flores Martiales, a composition of Iron & sal ammoniac (the dose from 4 gr to ℈j) or this last is Sudorific & Diuretic, & Boerhaave says it possesses Narcotic Qualities. —

To the 3d Class belong the Tinctura Flores Martiales, & Vinum Chalybeatum. ℥j of Iron filings & 3 pints of Sulphuric acid, from the Spirit: Vinet: Sal Mart: dose from ℥j to ℥iv
Dr Black was very fond of the Vinum Chalybeatum, he made it by macerating ℥j of Iron filings in XVI of Rhenish wine using no heat. Rhenish wine is preferable to any other kind, as it possesses more acid. It is a valuable

preparation, sits well on the Stomach, & is adapted to many cases of debility. Boerhaave gave it in doses from ℈j to ℥j & speaks highly of its recommending it as promoting digestion & as a Strengthener of the Stomach. The substance is perhaps a better form of exhibition. Mineral waters owe the chief of their virtues to Iron which is held in solution either by the Carbonic or Sulphuric acid. Dr Cullen says, as Iron like all other metals in its solid & entire state, is not active with regard to our bodies without being corroded or dissolved by saline matters, so we judge it to be rendered active only by being combined with Acids; & continues the Professor, we are ~~constantly~~ persuaded there is constantly present in the human Stomach a quantity of acid capable of dissolving Iron. As a proof of it says he, Iron when given in its metallic state produces a blackness in the stools

Dr Cullen's erroneous notion of Digestion led him perpetually into errors. An acid

is present in many of those cases in wh we give the preparations of Iron with most advantage. & we know that Iron in its Metallic State does become active without being acted upon by any morb: action in the Stomach. Experiments as far back as 1713 shews that Iron is dissolved by the Gastric Juice, & it is surprizing to me how he overlooked this fact. Iron is said by the Old Physicians to possess a twofold power viz that of restraining & that of increasing the Evacuations.

All the preparations of Iron are soluble in the Acids, & possess different degrees of the same Qualities. They possess a Tonic & Stimulant power, & increase the force of the Circulation.

Physicians generally suppose it to possess Aperient & strengthening Qualities. It increases the fulness & frequency of the Pulse, & possesses manifestly stimulating powers, increasing Hæmorrhages wh approximate to the active kind. ——

Diseases in wh it is employed.

The Italians who were averse to the Bark, used the Cascarilla & Iron in Intermittents they supposing it improper to stop them too soon, waited until nature by her efforts threw off the Morbid noxious matter. –

Some preparations of Iron are adapted to the Cure of simple Intermittents, but they are certainly all inferior to the Bark. Iron is a slow working Tonic, & has been beneficially employed in some of the Intermittents of the U. States. It is certainly improper in all genuine inflammatory fevers, & consequently in the first stage of Remittents & Intermittents in Strong Plethoric Constitutions, it is generally injurious. In a general Flaccidity of the System, as is frequently ranked under the head of Cachexy, & in all cases of evacuation from laxity whether Sanguine or Serous, the preparations of Iron says Cullen, are likely to be the most effectual remedies. They may be im=

portant remedies in the Serous, but its not an easy matter to distinguish between the Sanguine & Serous discharges. —

In Fluor Albus. This is generally considered as a disease of Debility. But as I have shewn, it is often attended with Inflammatory Symptoms. When it arises from debility, iron is an Important remedy - I have often used it with much advantage. —

In no affection except retention of the Menses has Iron been used with more advantage than in Gleets. This is often a general affection & will not yield to Topical applications, as the Balsam Copaiva &c. When combined with Columbo & Gentian, & persisted in for a long time, I have never known it fail in the cure of Old Gleets. —

In Retention of the Menses. This often depends upon a State of Debility & weakness of the vessels of the Uterus - in this case the preparations of Iron are most valuable. —

they ought be used whenever the Tonic plan is proper, & when that is called for, rare beef, & mutton, & malt liquors are to be used.

We must not however forget that in many cases of retention we are to avoid the Tonic plan, & pursue an opposite mode of treatment. —

In Chlorosis. There was a great controversy between Rollo, & Mandel about the action of Iron in Chlorosis — Rollo said it furnished Oxygen, & Mandel asserted it carried it off. I believe neither. The preparations of Iron are adapted to many cases of Chlorosis, & forbidden in others. —

In Hemorrhages. From the time of Pliny, iron has been used in Hemorrhages, & this opinion was founded on Analogy — Astringents being useful. The astringency however in Iron is by no means great, it is greatly overbalanced by its Stimulating qualities. There are cases in wh however it

wd be found useful

In Menorrhagia. When this depends on a flaccidity of the System, the preparations of Iron may be beneficial by their Tonic power, as they increase the fulness & force of the Circulation. It is difficult & an extreme nice business however, & we should venture upon its use with much caution.

In Hemorrhagia Renum. These are often owing to a great relaxation. Little or no pain frequently attends it. Vf is often a valuable remedy. Darwin combined Opium with the Rubigo Ferri. When this hemorrhage is active, I need not tell you that Iron is injurious. —

In Epistaxis. As Iron is prejudicial in all active Hemorrhages, so it must be in this wh I believe is always active, & is kept up by great action in the Arterial System.

In Hemoptysis. Iron is as injurious in Hemoptysis as the Bark. —

In Pulm: Consumptn. At times the preparations of Iron are beneficial, as when there is extreme debility. In long continued debility predisposing to Consumption, Iron will prevent the disease. In this case I have used the Rubigo Ferri in combination with Creta, with much advantage.

In Hemorrhoids. In old people, & in debilitated cases, the preparations of Iron are advantageous. In young people however, there is an increased action of the Heart & Arteries, & here it is to be avoided. I have cured one case by it wh occurred since my last lectures. It may however have proved successful by its purgative Quality, for I combined IV or V grs of Rhubarb to XXX or XXX of Rubigo Ferri. —

In Dyspepsia. The preparations of Iron have been often recommended in this Complaint. It certainly calls for very different modes of treatment at different times &

consequently Iron cannot be adapted to all cases. The Tonic plan of treatment is often improper, & the evacuant plan successful; we often derive much advantage from the last mode. In the Plethoric & Sanguineous constitutions, iron is prejudicial, & in the more lax beneficial. When employed it is generally combined with Gentian or Columbo. —

In the Water Brash. Rubigo Ferri is highly beneficial in this Complaint. It shd be combined with some of the vegetable bitters, particularly with Kino. X or XV grs with a few grs of the Rubigo Ferri. —

In Dropsical Affections. The management of these Complaints by iron is exceedingly nice & difficult. In the forming stage, the mildest preparations wd be injurious.

Sydenham tells us that in Chronic obstructions of the Liver & Spleen, he used the preparations of Iron with great success

In Gout Iron can never be ~~im~~ proper in inflammatory Gout. It may be useful in the debility wh succeeds, & in all cases wh call for the employment of Bitters. It sometimes calls up the Lava of the disease.

Of the Anthelmintic properties of Iron more hereafter. The phosphate of Iron I have never used. Hunter used it, it is generally believed that Iron exerts its effects on the Solid Stomach, & fm thence is communicated to every part of the body. It is by some supposed to enter into the System of the bloodvessels. No iron is ever found in the Urine as has been asserted. In Animals, no Iron is ever seen in the lacteals beyond the Mesenteric glands, & none in the chyle after it has left these glands, & entered the Thoracic duct. The assimilating powers however are considerably greater in Man than in other Animals, & I think in some cases, it is absorbed, or taken into the Bloodvessels. I

reason for Analogy, for in several experiments wh I made with Iron on plants, I uniformly found them to take it up greedily; & they will live longer in a weak solution of Iron than in simple water. The line of distinction between Animals & Vegetables is so faint, that it never can be fairly drawn. The Iron in the Blood combines with the Phosphoric acid. —

We find Iron existing in the blood of all Animals, whether Herbiverous, Carniverous, or those of a mixed nature as man. — It can't be absorbed by the Lymphatics, & it can't be taken in with our food, for we will find it in the blood of Animals whose food does not contain a particle of Iron. Mendin says the blood of those Animals wh have taken Iron is more Coloured than those wh have not. It no doubt disposes the system to form more of it without being taken in. — I believe Iron to be as much

a compound as water, this hint Gent: I threw out before Mr Davy's controversy, wh certainly tends to increase the probability of my conjecture. I believe it is formed by the powers of the System, just as semen and other secretions are. —

I must say something next of the dose of Iron. The saline preparations of Iron irritate the Stomach in large doses, so that it is proper to begin with small doses, & increase them to what the Stomach will bear. The Rubigo Ferri is my favourite preparation, & I commence with V & increase to X grs. In this way I have given in Leucorrhoea & old Gleet, 1200 or 2000 grs. I never think it proper to commence with more than V grs the dose, & it shd be always persevered in — ℥j of the Carbonate of Iron has been given in 24 hours.

The British Practitioners prefer the rust — the Italians the filings unrusted. Moor strongly recommends the Carbonate of Iron.

combined with Cinnamon. It is certainly an Elegant preparation, & sits well on the Stomach

Copper. —

Dr Cullen has placed this Metal in his Class of Astringents. It certainly belongs to the Tonics, & is one of those substances justly entitled to the appellation of Stimulant. Dr Cullen says it possesses Stimulant powers wh prevent us fm perceiving its astringency. It certainly is entitled to the appellation of Tonic, for the efficacy wh some of its preparations possess in curing diseases wh depend on a loss of tone in the System as much as Bark. — Lewis tells us that pure Copper in its Metallic state is not soluble in the Stomach, & consequently possesses no virtues, & that when swallowed, it lies in the Bowels & produces no effects. We know Copper however to be

x washing their

very soluble in the juices of the Stomach. — Stuart a German writer informs us that a Man who had swallowed a Cent, & discharged it 4 days after, voided it with all the figures erased, & holes eat thro' — And more than this. Copper is neither slowly nor difficultly soluble. —

The pernicious effects of Copper, are loss of Appetite, oppression at the Breast, Nausea, puking, pain about the Cartilage Ensiformis, inquietude. Convulsions — Paralysis — Apoplexy & Exanthematic Eruptions. People in Copper Manufactories are as healthy as any other men. This security from disease arises from their hands before meals, & once a week performing ablution all over. The Eruptions will occur if this precaution be not taken, & are of a green Colour. —

Copper exerts its Pernicious effects on other Animals besides man. Young dogs die from licking copper bars; if these it kills

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by puking. But on birds it has no effect, for Mr Tennant tells us that fowls constantly drank water contained in a shallow copper pan, wh had even acquired a green colour from that metal, without any bad effects. In its metallic state it is not employed, but it might be with advantage, for it does exert considerable effects on the system. It produces a salivation. A Child who had swallowed a cent was affected with sore throat, & it produced a discharge from the salivary glands wh amounted to ℥xvi in 12 hours, & this continued until the cent was evacuated.

Different preparations of Copper are used. The acetate of ~~Lead~~ Copper or Verdigrise, made by corroding Copper with the common vegetable acids, as by placing layers of it with grapes, is used in old ulcers, particularly those of a venl Origin, & wh touch the bones. I have never used it, but it has been much advised. It enters into the composition of a

pill ℞ has been used in Cancers. —

It is more commonly used externally than internally. A preparation of it with Olive Oil, or Sal Ammoniac, grs 8 of Verdigris to ℥8 of the Oil has been used: —

Of Verdigris — ℥j
Spt. Sal: Ammon. ℥iv
Distilled Water — ℥x Mt et. F. Injection has been used in Gonorrhoea & Gleets

I must here repeat that our injections are often too strong. Copper was introduced as a Med: at a very early date. Many of the preparations were externally used in the time of Hippocrates. In the 17th Century Mr Boyle recommended a preparation in Intermittents called Eau Vereris. —

The Cuprum Ammoniacum recommended by German Writers is very similar. —

The Blue Vitriol is an Emetic, & it wd be more properly treated of under that head, but I will remark that it has been erro=

reously supposed as a Sulphate, for it is a super-sulphate, & turns vegetable acids red, wh the common sulphate will not do. It has been recommended by some Practitioners in Agues, given in the dose grs 1/4 to gr 1 3 or 4 times in the course of 24 hours - grs vi mixed with ℥j of Canella alba, & made into pills have been directed

Blue Vitriol grs vi

Extract: Cort: Peruv: grs 32 Mix & F 16 pills four taken of a day is said to have cured intermittents in St George's Hospital wh resisted every other remedy. It always produced sickness at first, but these effects lasted only a day or two. I am disposed to think favourably of it. Last summer I gave it to several Patients, combined with ginger or Bark. In some cases it failed, in some it was beneficial, & in others it effected a cure. It is said to be more efficacious when it produces Nausea -

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I formerly employed it in Gonorrhoea & Gleets, but have long since given up that practice. Dr Shippen gave IV grs to ℥viii of water that is Rose Water. —

Cuprum Ammoniacum.

This deserves much of our attention. —

Take Sulphate of Copper — ℥ij

Vol: Sal: Ammon: — ℥ij Rub them together in a glass Mortar, till the Effervescence is over, & they collect in a mass, then rub them over a Stone, & put it in a bottle for use. —

This has been recommended in various diseases, but chiefly in Epilepsy. It being a med: of great activity, we shd begin its use in small doses say 1/4 gr twice a day; & increase it gradually to 1 gr

In Epilepsy. Too much has been ascribed to it in this Complaint. It is however often beneficial — I cured an adult with it

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after bleeding, blistering & salivating. Cullen found it beneficial, but he says if it was not successful in a month, he desisted from its farther use, being afraid, that little lead, it might prove hurtful to the body. Duncan informs us that he used it in several cases, in some with manifest advantage, in others with none. — There is much less reason to suppose an accumulation of copper in the system injurious, than has been generally thot, for it may be persisted in a long time without the smallest degree of injury. It is a powerful med; & its stimulating effects are always very obvious. I never ventured at first on more than the 1/4 of a gr. & it generally produces when first taken a slight nausea; & like Arsenic, when properly managed produces neither puking nor purging. I combine it with Ginger. —

In Dropsies. It frequently, says Dr. Cullen, acts as a Diuretic, & is good in

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some cases. Boerhaave used ℥j of the filings of Copper to ℥viii of the Vol: Sal Ammon: giving 2 or 3 drops at a time in Soup

Acts in destroying worms in two ways — By its poison & by its Tonic qualities. This preparation like Copper itself, has salivated

Its Escharotic powers were known long ago, but since the introduction of Merc^y it has not been much used in cleansing foul ulcers.

The Operation of Copper & Mercury, Dr Cullen very properly observes is very similar — Open Ulcers of a Scrophulous & not of a Flo=id kind, where there is great flaccidity, & requiring stimulating applications are advantageously treated with Viridiqris combined with Basilicon in the form of an Ointment. It is very good in Old Venereal Ulcers & Chancres for 2 to 20 gr. dissolved in 1 or ℥ij of Water forms a good wash in those cases wh^n succeed the use of Mercury. An Ointment of Verdigris & Hogs Lard is said to

be useful in some cases of Tinea Capitis, & some do call for Stimulating applications. —

It has been used in different affections of the eyes; it acts by its Astringent & Stimulating powers. Dr Cullen says much nicety is requisite. —

Aqua Sapphaina. This has been said to take off Specks on the Eyes. —

Silver

The Argentum Nitratum is the preparation now employed. It is made by dissolving Silver in the Nitric Acid, & adding water. Its Escharotic powers on the Fungous flesh in Sores has long been known & is likely to continue. I use it differently from other Physicians, touching the Chancre with a Camel's hair brush with some of the Escharotic upon it; & when it gives much

pain, wash the ulcer with water. When the Chancre or Ulcer is Circumscribed, & the application of Caustic is to be confined to narrow bounds, this application with the Camels hair brush, is particularly well suited. It is most powerfully Antiseptic & in 12,000 times its weight of water, prevents the putrifaction of meat. —

Argentum Nitratum is much used in indolent ulcers, stimulating them to granulate, & having this advantage that its Strength may be increased to any requisite degree. — There are 3 kinds of Ulcers, one connected with Buboes, another attacking Seamen particularly — & the 3d Common in Hot Climates called Ringworm. I have used the Nitrate of Silver in the first species with advantage after the failure of Bark & Hemlock. In the Ringworm, the Oxymuriate of Mercury is beneficial — if this fail, try the Argentum Nitratum. —

In Epilepsy. The Argentum Nitratum is much celebrated in this Complaint. Dr Sims in London was not the first person who used it. It was employed in Europe 12 yrs ago. — In Epilepsy Dr Sims found the Nitrate of Silver to effect a cure in some, to moderate the violence of the Paroxysms in in others, & in some to fail entirely. —

Dr Wilson gave grs iij 3 times a day, & records cases in wh it was successful. —

Dr Cap published accounts, & we find that in some cases it was of no importance; in some it mitigated the Paroxysms, & others it cured. — Sims tells us the Argent Nitrat: first aggravates the disease before it cures it. Cap did not observe this effect he gave gr ½ 3 times a day —

It has not been much used in the U. States but it has in some instances, & with manifest advantage. It often fails & has with me in 3 or 4 cases in wh I used it — 2 of

them had the powers of the mind much impaired, & in them it produced no effect in one case it purged violently. Dr White gave it to a boy of 6 yrs of age VI grs and found it to alleviate the complaint. Dr McHenrie gave 12 grs a day. It is worthy of attention that Epilepsy depends on very different causes & calls for different modes of treatment. When attended with a Plethoric state of the System, low diet & the Antiphlogistic plan shd be observed: but even here Tonic Med: are also proper. When depending on debility, tonic and even Stimulating Med: shd be used. I have used the Cuprum Ammoniacum with much advantage, & wd as soon refrain from the Bark in a Tertian Fever as from Tonics in Epilepsy. When the powers of the mind are not much impaired, there is much reason to hope.

In Angina Pectoris or Asthma Convulsiva. One case was cured by the Nitrate of Silver. Dr Swiedaur says it is taken up by the lacteals, & carried into the course of the Circulation. In an obstruction of the Liver when the Nitrate of Silver was used the Skin became black, & continued so for months, after wch it wore off. This effect was not occasioned by the Nitrate of Silver. Its powers are propogated thro' the Solid system. I offer no Apology for placing this Article under the head of Tonics, because it Purges, for bark & many others do the same

Zinc.

This is entitled to ye attention. The Flowers of Zinc are made by exposing the Metal to a dead heat in an open vessel. The ancients knew it & it is described by Dioscorides, hence their names Nihil Album & it

was brot into use by Gaubius. It formed an ingredient in a famous quack Remedy in Epilepsy - Gobius advised one or 2 grs a day. Mr Bell cured a man who had been affected 16 years. Dr Colon cured a man from the W Indies by it who had been long affected. — I have never used it. —

It is a Curious Circumstance that the union of the Flowers of Zinc & Cupreum Ammon: can be borne in the same proportions together, as easily as either of the articles alone in the same dose. For instance, a man will take grs 2 1/2 of the Flowers of Zinc, & 2 1/2 grs of the Cupreum Ammon: with as much safety as 2 1/2 grs of either seperately No. is he able to take 5 grs of either alone.

Zinc in combination with the Sulphuric Acid, forms a Med: highly deserving of our attention. It is at times found ready formed in the Earth, as in Germany. There are 2 varieties, the Sulphate & Super Sulphate

its properties have not been well examined. It's more soluble in boiling than in cold water, it effervesces in the air; when heated, it loses its water of Crystalization, melts & parts with its Sulphuric acid. — The super sulphate of Zinc enters into the composition of the Quassia draft, & that mixture owes much of its virtues to it. —

I have given it as a Tonic uncombined — More frequently however in combination with Gentian & Columbo. Its Roborant effects are great when given in this way Say 2 grs of the Columbo to 6 or 8 of the Vitr: Alb: 2 or 3 times in 24 hours. —

<u>In Epilepsy</u>. I have used it with advantage in a case of Epileptic Chorea wh occurred in a boy of 8 yrs of age. —

<u>In Pertussis</u>. It is advantageous here by its Emetic Powers, of wh I shall treat hereafter. I owe my knowledge to Saunders — he used it with uncommon

success. All its virtues however are not to be referred to its emetic Powers; for some of its virtues certainly belong to its Tonic properties. —

It lessens the violent convulsive action of the Muscles, & abates inflammation. — When I give it, I look for its Emetic effects, but when it does not prove so, I have found it of advantage, wh benefit must be derived fm its Tonic qualities. My practice is to give the Super Sulphate of Lime 2 or 3 times a day on an Empty Stomach; & in the interval to give the Mucilaginous Mixture. The dose of it in this affection is hard to come at. For a child of 4 or 5 yrs of age, I use ℈j to ℥iv of water, & give of this Mixture 2 or 3 teaspoonfuls, 2 or 3 times a day. Children take it better than they do Ipecac: or Antimonials. — It impairs their appetite less, & is I think of more service: —

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In Gonorrhoea & Gleets. This has been long employed in these affections, & will continue to be so. It is generally combined with Sacch: Sat:, & forms a most excellent injection. We however cannot repeat too often the necessity of attending to the strength of these injections. I formerly fell into this practice, & had then frequent cases of Hernia Humorralis, a circumstance wh has never occurred to me since I have reduced the strength of my injections. —

Vitr: Alb — — — grs VI
Sacch: Sat: — — ij
Aq: Font: — — — ℥viij forms an injection full strong. One syringe full shd be injected 4 times in 24 hours. — The Vitr: Alb: is often used with great advantage uncombined. It is often used as a wash x grs to ℥viij of water or some vegetable astringent infusion

Acetate of Zinc. —

It has a bitter Metallic taste, is soluble in water, & is not altered by exposure to the air. Dissolved in rose water it is used as a Collyrium. It is given internally in all cases in wh the Calx is exhibited. 5 or 10 grs prove a very speedy Emetic. —

Mr Henry used an injection in Gonorrhoea of X grs to ℥IV or VI of water. He used it with a thin Mucilage of Quince seed, & observes its sweating is favourable. He says it is better than Vitr: Alb: & is less liable to give pain, & to cause a swelling of the testicles.

Dr Ferriere & other British Practitioners, agree with Mr Henry. I have not tried it. But the best way of making it is to add to the super sulphate of Zinc in 6 or 8 times its weight in water. A solution of the Acetate of Lead in twice its weight of water. A precipitation ensues, wh wash, evaporate & Crystallize. —

Bismuth. —

I have no experience on this subject. Dr Smith recommends the Magistery (wh is the preparation chiefly used) in Spasmodic diseases of the Stomach in doses of grs IV four times a day. — The Magistery of Bismuth is made by a Solution of the Metal in Nitric Acid, diluted with water. —

Arsenic. —

This valuable Med: is entitled to much of our attention. It is a Semi Metal, & this fact was first proved by Macquer. It is supposed Capable of Coagulating Aqua Fortis To the celebrated Scheele we are indebted for our knowledge of its being capable of forming an Acid, or in other words of its being Metamorphosed into one. He has given us two processes for Obtaining this Arsenical acid — One by means of the Oxygen-

ated Muriatic acid; the other by the Nitric acid. It is generally obtained by distilling 6 parts of Nitric acid for one of Oxyd of Arsenic. Arsenic is an Opaque Ponderous metal, & is often found Native, when it is black & Ponderous, tho' at times it possesses Metallic Brilliancy. When dissipated on Coals, white fumes arise & give out a Garlic smell. The Regulus of Arsenic is of a black or green Colour, is ponderous friable, & the most volatile of all Metallic Substances. — When heated in Contact with atmospheric air, it becomes Oxydated. It unites with almost all the metals & it renders brittle. In its Reguline State, Arsenic has little or no effect on the System; but when combined with Oxygen, it has a strong caustic taste, & is a most virulent poison to all animals. In this respect it differs from other Metallic poisons, as Copper for instance.

Pure Arsenic is not to my knowledge

ever employed. –

Fowlers Solution. –

White Arsenic in fine powder grs 64
Potash ——————————— grs 64

Let boil them in ℥viij of water until the Arsenic is entirely dissolved, then add after the mixture has become cold ℥viij more of water & ℥ss of Compound Lavender. – The dose of this Med. for an Adult is 10, or 12 drops 2 or 3 times a day. – It is used in Intermitting fevers. Rheumatism, Periodical Headache, & Cutaneous Eruptions.

Dr Darwin says, a saturated Solution of Arsenic in Water is better than this Opaque preparation. He supposes it acts by stimulating the Stomach into strong action, & thus by association of this Viscus with the heart & arteries, prevents the torpor of any part of the sanguiferous system. –

He took much more white Arsenic in Powder than can be dissolved in distilled

water, & boiled it for half an hour in a Florence flask, or Tin sauce pan. filtered it, & put it by for use — 10 drops of the Saturated Solution is the dose. —

I always give it in substance, & believe was the first person who exhibited it in this manner. — I latte the Oxyd of Arsenic, & combine with it a small portion of Opium, so that each pill shall contain 1/16 gr of Arsenic & 1/4 gr of Opium. I never begin with a larger dose, & in Intermittents I give 3 of these pills a day. This is far superior to Fowlers Solution, it is both cheaper & safer. When dropt even if it be from the same Phial, & by the same hand, the drops must vary much, so that the precise dose cannot be ascertained. I was induced to combine opium with it from my great success in a similar combination with Lead, & finding the deleterious consequences of that article

entirely destroyed by the Opium, I expected a similar effect with Arsenic. The result has abundantly answered my expectations. Besides its operation on the Bowels is a frequent cause of the failure of this Med: it is entirely & completely obviated by the Opium. I have often cured Intermittents with it by 16 or 20 pills (only 1 gr in all) but at other times I have not succeeded, until I entered on the 3d gr.

I dont say that Arsenic is always successful – On the contrary it often fails. Donald Monro says, it did not stop the ague fits

Fowler says he failed in 12 cases with his Mineral Solution. I have exhibited Arsenic & been much disappointed in its effects. In the Autumn of 1804 particularly in the vicinity of Philadelphia, I found few cases in wh it answered. It is unavailing in those Intermittents tend-

ing to Typhus, as Arsenic does not act as a powerful & true Tonic.

Arsenic is not a true active Tonic Med: & in the neighbourhood of Fredericktown it is not successful from this cause. During the last Summer I found the Pills & Fowlers Solution much less efficacious than they generally are.

All the Authors wh I have consulted, have been very obscure as to the time of the exhibition. For my own part I have observed nearly the same rules wh I do with the P. Bark. I never intentionally exhibit it either in the hot or cold Stage — neither do I exhibit it a short time before the Paroxysm, but always during the Apyrexia. It certainly is not so important to attend to these rules in the exhibition of the Arsenic, as it is in the bark, but yet it is necessary to pay considerable attention to them.

Arsenic is a powerful & dangerous re-

medy in Intermittents. it shews its effects very soon, & if no effect be observed in a short time, or no visible change in the system, it is proper to omit the Arsenic. The same observation applies to Sacch: Sat: both of them make their impressions suddenly, in this respect generally differing from Iron wh is a slow working Tonic — When given to the extent of 2 gr if it doth produce beneficial changes, some other medicine shd be substituted. To this however there are many exceptions, but I give it as a general rule. —

Fowler tells us his mineral Solution proved successful, tho' his patients had laboured under Intermittents for many months from 1 to 5. — In the last case he gave the solution in the dose of 10 drops for 8 weeks 3 times a day. He also observes that many Intermittents will not yeild to the Arsenic or Bark seperately, wh may be easily tri-

umpted over by the combination of these two medicines. The truth of this observation I have had frequent opportunities of seeing, both in private practice & the Penn: Hospital

Altho' I have placed Arsenic among the Tonics, I do not believe it cures Intermittents by its Tonic power; because neither the tone of the System, or the Strength of the Patient is increased. Bark imparts Strength & invigoration to the Stomach, so do all bitters & Astringents - even Opium cures Intermittents in some measure by its Tonic power. But when Arsenic is given, no Strength is imparted even to the Stomach, & it leaves a Mild Nausea like the Antimonial Med: - After the fever, a Langour is left, tho' no injury is sustained. The bulk of the body is enlarged by the relaxed state of the Tela Cellulosa, & more exists than there is in health. A new disease of the System takes place very different from

any effects produced by other Tonic Med:
In 1807 a Sailor was admitted into the Penn:
Hospital, I gave him the Arsenic to wh his
intermittent yielded in a Short time; but
great debility succeeded, he appeared to lose
the use of his legs, & when he attempted to
walk, he fell directly to the Ground. —
In Short a new disease succeeded, wh wore
an Alarming aspect — It afterwards dis=
appeared. —

The Edematous swelling is induced
when the Success of the Arsenic has been
most complete. It is frequently the Conse=
quence of the use of Arsenic. It affects chil=
dren & adults in every part of the body
in the face hands & feet, & there is a pe=
culiar livid Aspect —
We find it never to occur until the Ar=
senic has subdued the first disease, for
it arises as much fm Arsenic, as the
Colica Pictonum does fm Lead. It shews

its Operation especially on the Tela Cellulosa, diminishing the Contractility of this membrane, & producing effusion. I have taken the liberty of calling it Œdema Arsenicum. It often occurs from the exhibition of Arsenic. The Œdematous affection is noticed by others besides myself. Plenis makes mention of it. The Œdematous Swelling of the Mouth, always yeilds to Diuretics. I first noticed this. I don't say it is always the Consequence, but in a majority of cases, when the first disease is cured, more or less of it certainly does occur. —

When the disease resists the powers of Arsenic, I have never seen one instance of this Œdema. It appears that the production of this Œdema is necessary for the efficacy of Arsenic in Intermittents. Arsenic differs from Tonics in its effects of preventing Paroxysms. In that species of headache ch. I have mentioned, & ch. is a true Intermit—

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tent returning periodically every day, or every other day, we find the Bark & other Tonic med: efficacious. I have tried Arsenic & found it unequal to the cure with the exception of only one solitary case. Fowler said he used the Mineral Solution in this very kind of periodical Headache with much advantage. Darwin says Arsenic stimulates the Stomach into stronger action, & thus by the Association of this Viscus with the Heart & Arteries, prevents Torpor in any part of the Sanguiferous System. This is by no means satisfactory for we have no proof that Arsenic stimulates the Stomach into stronger action, as it sometimes cures without any perceptible action, & at others produces Nausea like Antimonials, in wh last case indeed it is probable our med: is more efficacious. This proves that it produces some action to be sure, but it is

very different from Wine or Opium, for the Arsenic cures when they will not, so that it cannot be by its stimulating effects. — He says "it prevents the Torpor of the Sanguiferous System" I think it evidently increases it; & does not the production of Oedema favour this Opinion? We certainly know that it does not increase the heat or strength of the System. —

Among the Physicians who have used Arsenic in Intermittents, Joseph Plenck is its greatest advocate. He calls it the most powerful of all Febrifuge Medicines, & tells us that his father used Arsenic in 1772 — years before him, & that he found it a safe & effectual Med:. He cured a Quartan wh. wd. yield to nothing else. Plenck tells us that he combined it with Benzoic Mineral, & the flowers of Sulphur, giving it before the Paroxysm; & he thinks that its bad effects in the hands of

other people, arises from its being uncombined with other Articles — He says it stopt vomitting, sweating &c He talks of giving 2 oz thus combined —

I will now deliver more especially a few observations on Arsenic —

1st — It is a safe & effectual remedy in many cases of Intermittents & Remittents

II It often cures the disease in as short a time as the Bark, & there are many cases in wh it is as well adapted; & where there is rather an excess of Arterial action, it cures when the Bark cannot

III When unequal to the cure, it on some occasions prepares the System for the better and more speedy effect of the Bark, in this respect resembling Mercury, wh reduces that excessive action wh is an obstacle to the efficacy of the Bark

IV In Quotidians, Tertians, & Quartans, tending to Typhus, it is not comparable to the Bark, neither in those Intermittents of long

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stand.g whether kept up by Debility or the power of habit. —

V It is more efficacious in substance, & also more safe when combined with Opium. As it is a dangerous med: it shd be prescribed with Caution, & not given unless it is convenient to visit yr Patients often — hence its exhibition belongs more properly to City than to Country Practitioners. —

I first pointed out the kind of Intermittents in wh Arsenic was the most efficacious, viz in those of great excitemt or where there was an excess of action; & that it shd be avoided in those having a tendency to Typhus, or where there was a deficiency of action. —

Arsenic is therefore adapted to those Intermittents & Remittents in wh there is an excess of action. — Arsenic, says some writers, is a deleterious med: & when it cures Intermittents, it lays a foundation for affections worse than the Original disease. — I have

allowed that it produces Edema, but I assert it to be a very curable affection.

Mr McDuer says that those people who have been cured by Arsenic, are liable to become consumptive. I don't say that it may not predispose to Consumption, but am of opinion that there is considerable fallacy in this observation. We must remember that Intermittents themselves very often predispose to Consumption. And again, Arsenic is more extensively employed in the U. States than in any other country, & yet we have not heard of its producing any cases of Consumption. I have given Arsenic to persons of all ages, & even to those predisposed to Consumptn, & never did I find it to produce one single case of this disease, or permanent injury to any patient.

In Hectic Fever. As far as I know I was the first person who ever gave Arse-

vie intentionally, with a view to prevent the recurrence of Hectic fever. I have not however much experience

In the Spring of 1804, Miss Nurse, a girl of extreme tender fabric, & delicate constitution who was also predisposed to Consumption, had a Pneumonic attack for wh she was bled & Blistered. The intermissions were accompanied with an incipient Hectic; & being unable to take bark on acct of a distressing tightness of the chest wh it produced. I put her on the Arsenic pill, & in a short time the disease was amended & subdued; after this, retiring to the Country for the benefit of the air, she relapsed for exposure to a damp house, & the disease assumed unusual violence, putting on now the type of genuine Hectic fever. Her cough was very severe & her friends feared the termination of her life. She was however again in a great measure restored to

health by means of the Arsenic pill. She returned to Germantown, relapsed again, & died of the Consumption, but I believe her life was prolonged one year by Arsenic. In Germantown it has been used with much advantage in keeping off the Hectic chills. —

In Rheumatism. This has some affinity to Intermittents. I have no experience of my own. Dr Parke read before the College of Physicians, a paper giving an account of his success with Fowlers Solution in Chronic Rheumatism, but this opinion is founded on the supposition of its depressing the System. —

In Hemorrhages. The Italian Physicians in 1719 warmly recommended Arsenic. I know not their practice, but theoretically speaking, I wd suppose it much more beneficial in active than in passive hemorrhages — as I never have used

it, I can scarcely hazard a conjecture, but shd suppose it adapted only to those of an active kind

In Chronic indurations or Obstructions of the Liver & Spleen – Arsenic may be used where the preparations of Iron should be given. Its operation is similar to Mercury, for neither act by a Tonic power

In Hepatitis I have no experience, but think Arsenic bids fair to be useful, & shd be tried when Mercury & the Nitric acid fail. –

In the Intermitting Pulse & Palpitation of the Heart. Darwin says that Arsenic has been beneficially employed here. In speaking of Nitrate of Silver – I said there were some cases of Angina Pectoris to wh it was adapted. In these cases, Arsenic seems also advantageous. Mr Edward Alexander of Halifax, relates an impressing case in wh pain was relieved the first day

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in ch. he began with the Med: his success was also equally great in another case. —

I expect Arsenic will be found beneficial in genuine Asthma, returning Periodically —

In Epilepsy. Arsenic promises much here. Mr Alexander cured a case by Arsenic, of 4 or 5 months standing, attended with convulsive fits — It arose from worms. — Mr Fisher has published a paper on the efficacy of Arsenic in worms. —

In Cancers & similar diseases I have little to offer you on Arsenic — It does not cure by its tonic power. Mr Le Febre tells us that a weak solution of Arsenic with an equal part of milk taken internally will cure Cancers. It is the most active ingredient in all Cancer powder. — Plenk, Cancer powder contains Arsenic, he said it was infallible. Altho'

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at times it did mischief in making the Ulcer spread, & giving much pain, yet it was often advantageous. —

Formula of Plenk's Cancer powder. —

Crows foot one handful. —
Dog's Fennel — 3 sprigs
Crude Brimstone 3 thimblefuls
White Arsenic — 3 Do. —

The Crows foot is a species of Ranunculus, & is of a very acrid nature, the irritating effects were owing to this plant & not to the Arsenic. —

Martins Cancer powder certainly contained Arsenic. Dr Fuchs says, he believes it produced Apoplectic symptoms in a lady to whom he was called. — Mr Justemann says Apoplectic symptoms follow the external application of Arsenic.

Martin was certainly very successful tho' at times he might have done harm. This vegetable substance wh he used probably

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corrected the power of the Arsenic. I think it was the Orobanche Virginiana Mr Simmons of Manchester, England, has published an acct of his success with Arsenic given internally. he says it diminished the pain of the Cancer, promoted the healing of the Ulcer, & in proper doses was safely administered for a long time — he gave 12 drops of Fowler's Solution 3 times a day. — I must here remark that in some cancerous sores where there is much debility & great pain, it is necessary to omit the Opium, as it increases the pain. Carrots, Hemlock, &c have been recommended. Mr Ferin says Arsenic is not proper in Cancers, & tells us that he has performed cures by V.S. alone, it promotes the Sloughing. I have no doubt it may be beneficial, but that it could effect a cure alone is very doubtful. Dr Monro also recommends bleeding. —

Arsenic has been

employed in Tinea Capitis, Herpes, Yaws, & other affections of the Skin with much advantage. It is considered by many writers as a Specific. — Its external application is adapted to some of those affections, but in many of them it is hazardous — as dreadful diseases has been the Consequence of this external application. Martins powder it has been said produced death in one case when externally applied. Mr Justin am also relates such cases. Arsenic when applied externally to the Surface of Old ulcers has produced much pain & inconvenience. A man was once killed by using Arsenic as a Wash for the Itch. In the Year 1805 I employed Arsenic in an extensive ulcer in the Hospital, it was not however beneficial. I gave the Arsenic until 1/3 of the Ulcer was reduced, for it had a surprizing effect on it — The Patient pleased with the prospect of soon becoming

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relieved of a troublesome sore tooth instead of one pill, at least 15 or 16 of them, wh had been amalgamated into one lump by some rain wh had beat thro' his window the preceding night. This was attended with no ill consequences whatever & he soon recovered. A Patient may without inconvenience take ʒ ss in an Intermittent, but it is proper to keep in view the poisonous effects

Sherwins preparation called Arsenicum Tartaristum or Salubri, is thus made. —

White Arsenic — ℥ij
Crude Arsenic — ℥ij
Pure Water — ℥ XVI. Boil

them half an hour, strain, lay it by, & filter thro' paper. — He says it exerts considerable effects when rubbed on the Palms of the hands, increasing the urine, & producing nausea in the morning. — These effects I have never perceived. —

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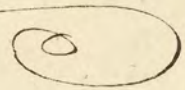
It is highly important to give unequivocal testimony in a Court of Justice respecting death being caused by Arsenic. I have no doubt you have recieved ample information on this head from the Professor of Chemistry. The lungs are inflamed, an unusual quantity of blood is carried to the heart, the intestines are distended with air, & the Dura Mater with blood. —

The Garlicky Odour arising from the powder washed from the Intestines, has been supposed an unequivocal proof: but this is not so. — In Rickets we often find the breath of a Child impregnated with a garlicky Odour.



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Tin. —

The preparations of tin was once in high estimation in diseases of the Lungs, Liver & Uterus, but are now deservedly neglected. — The powder of tin is retained as an Anthelmintic yet. The Aurum Musivum was the last of the preparations wh was allowed a place in the London Dispensatory. It was used in Hysterical & Hypochondriacal diseases, but is now laid aside, as being an inert Calx or Oxyd of Tin. It is said to contain Arsenic. Alston says not, & tells us it produces no bad symptoms. Black says it produces Colic pains. Tin reduced to powder is the principal form in wh it is now used. Tin is used in Culinary vessels, & is said to be very prejudicial. I dont know that it is as soluble as iron or copper

In Worms. It has been much used as an Anthelmintic. In 1730 it was strongly

recommended by Alston of Edinburgh, he calls it a Specific - he gave it in doses from ℈j to ℥j. The powder has even been said to cure Epilepsy, & with this view Donald Monro gave it. He tells us he found it good only in those cases of Epilepsy depend^g on Worms. Tin is a feeble med: but it is entitled to the Character of a valuable worm med: Tho' a weak tonic we are disposed to believe from the Testimony of respectable writers that it is a better Anthelmintic than Tonics of a more powerful kind. If its virtues do not depend on a mere mechanical action, as they probably do, they must upon some unknown power, of this however more hereafter. —

Nitric Acid. —

This article has lately been much introduced into practice. It has been found useful in cases of Phthisis Pulmonalis Hydro-

thorax, & Chronic affections of the Liver — It is also found useful in debilitated habits Dyspepsia &c. Of the Salts formed by it more hereafter. —

Sulphuric Acid. —

This is well entitled to a place in the class of Tonics, & its tonic powers are well established. In the form of Elixir Vitriol it is constantly used, & is now become a necessary article in the Mat. Med. I might have placed it under the head of Diuretics. — It is employed in all those cases of Debility where the different vegetable bitters are used

We often employ it in union with Gentian. It has been lately said to be good in Epilepsy — of this I know nothing. In certain Spasmodic or Convulsive affections, it is an important remedy. Dr Duncan tells us he cured one case of Singultus by it. —

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In Fluor albus. — One writer says he never saw such permanently good effects from any other Med: I have used it but not with uncommonly good advantage. —

In Hæmorrhages of Red Blood. Sydenham says he cured a case of Hæmorrhage from the kidneys by the Sulphuric Acid. — Astow tells us it is very beneficial in combination with Opium — In long continued cases of Itch & such affections, a small portion of Sulphuric Acid mixed with Hogs-lard is an excellent external application. —

Sulphuric Acid — ℥j
Hogs Lard — — ℥j Mix & form an Ointmt. —

Sulphuric acid has also been used in Rheumatism. In the form of Ointmt I think it must act solely in cases of Rheumatism by its rubifacient qualities & not by its Tonic.

Muriatic Acid. —

This is used with great advantage in Dyspeptic affections. I have given with much benefit 8 or 10 drops, 2 or 3 times a day. — Its action is immediate. — Muriatic acid has been employed in Jaundice. In Baltimore it has been used with considerable benefit, as a common garge in Angina Maligna. — Dr Wistar has also used it here —

Muriate of Soda. —

This is a most powerful & valuable Tonic Article. It is so constantly used in diet that it is seldom employed in Med: The appetite for salt is not a vitiated one All nations either use it, or employ for it some substitute. Convalescents from Cholera Infantum, Diarrhoea & Dysentery call it their reasoning appetite for salt meat & articles — act by invigorating the Stomach. —

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After my Arthritic Vomitings are over, my Stomach uniformly calls for Salt. It is beneficial in the low state of Typhus Fever. Some of its good effects cannot be ascribed to its Tonic power. –

In Hæmoptysis this Salt has been much Celebrated, It is said to be adapted to all cases. The Nitrate of Potash is much less efficacious. It has been said to be instrumental in producing Scurvy. I think too much has been ascribed to it in this respect. We hear it charged with promoting the formation of Calculus in the Bladder, but for this I think there is no foundation, & in fact Muriatic acid has been recommended for the complaint, & we find both Articles entering into the composition of Lithontriptic Med^s. It is said to injure the teeth, & Jorculson who had the best teeth of any man in the World, never ate Salt.

When taken in excess, it may prove injur=

ious by injuring the Gums. —

Lime. —

When pure, it is as soluble in hot as in cold water. It is styptic to the taste, & shew the general effects of Tonic Medicines. It is highly beneficial in Dyspepsia, when it acts partly by absorbing the morbid articles in the Stomach independant of its tonic effects — & even where it exerts no Tonic effects, it is advantageous. A small wine glass full, in union with an equal quantity of water, & a wine glass of milk is very efficacious in checking vomitings in the Y: Fever. — If it often fails, it is as frequently successful when others fail. I have found it to afford me great relief in my Arthritic vomitings. In a case of genuine black vomit — I directed lime water to be mixed with the mixture just mentioned, & to be given to my Patient; but instead of

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lime water, they gave the cream of lime, or what is called whitewash, mixing it as I directed the lime water. It stopt the vomiting & the Patient recovered. —

Lime water has been used as a wash for old ulcers; & it shd be used where astringent applications are indicated. —

Of the Lithontriptic & Anthelmintic properties of lime more hereafter. —

One part of Sweet Oil & 3 or 4 of lime water, forms a most excellent mixture in Burns. — It is formed by a Saturated Solution of lime in a Shallow vessel, & pouring the Oil upon it, & agitate it with a Spoon; when it appears in a manner whisted, wet a cloth with it & apply to the burn. We must always take this precaution previous to using it, as the Oil very soon seperates fm the water. —

Muriate of Lime.

This has long been known. It was formerly called fixed Ammonia. It is used in Scrophula, Dyspepsia, & Hectic fever. It may be carried to the extent of ℥i, tho' we sh^d not begin with more than 8 or 10 drops, 2 or 3 times a day. It is a most excellent med: in Scrophula, both of the occult & open kind. I have used it with much advantage; & in one case of Goitre. In a peculiar species of Scrophula w^h occurs frequently among the blacks in the W Indies it appears in the form of a long line or string of enlarged indurated Lymphatics in the extremities &c.

Aqua Phagadenica is formed by dissolving Corros: Sub: in Lime Water It forms a good wash in some old Ulcers

Muriate of Baryte.

This is one of the Primitive Earths, & is found combined either with the Sulphuric or Carbonic acids. The native Carbonate is poisonous to all animals. When in combination with the Muriatic acid it is used in Med: A saturated Solution has been used in Scrophula & Hectic fever. The dose is from 5 to 20 drops. It increases the appetite & strength of the Patient, & also promotes Diaphoresis. In too large doses it produces Vertigo, Insensibility &c.

In Cancer. Dr Trotter found it good in Cancer, Cutaneous affections, & old ulcers on the legs. Dr Black says it is peculiarly beneficial in the Scrophula of Negroes. The substance of the Ulcer is Superficial, & there is a string of glandular Swellings wh afterwards break. Mr Pearson recommends it when there is Venereal Symptoms. ———

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Stimulants. —

We now commence Gent: with the important class of Incitantia, or Stimulantia. I am indifferent wh term you use they are both equally applicable. —

The term Incitantia was used by Sinnous who has made too extensive an application of it, but Darwin who took the term fr Sinnous, has not made this abuse of it. I begin with Vol: Alkali. I now place it at the head of the Class Incitantia

Volatile Alkali, or

Ammonia. — This is a most important med: in fact it is impossible to manage many of the diseases wh occur in a wide range of practice without it. I conceive it to be one of the 4 or 5 most important articles in the Mat: Med: I shall make no inquiry into

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its natural History. Its Chemical History I presume you are all acquainted with. It is produced from a number of vegetables, & by distillation from the fungous plants — from the Silaquose as Mustard Horseraddish &c. It is considered as an Anti Scorbutic. —

It is not my intention to lay before you an acct. of all the diseases in wh. it has been said to be useful. I shall just give a few scattered hints, wh. however will be somewhat methodically arranged. —

The stimulating powers of the Vol: Alk: are very manifest, & evidently shew the propriety of placing it under the head of Incitantia. It is certainly a far more powerful stimulant than Opium

I shall now speak of the

Diseases in wh. it is employed.

I shall relate those cases only in wh. it has been particularly advantageous

In Intermittent Fevers. From the affinity of the properties of the Vol: Alk: to many articles wh are adapted to Intermittent fevers, many Physicians, (& particularly the European) have been induced to employ it before the time of the expected paroxysm; & they say with the effect of moderating the chills & succeeding fever. It has also been employed in the hot stage with a view of promoting Diaphoresis in this case it was combined with Opium. One writer ascribes more efficacy to it than to the P: Bark. There are many cases in wh when combined with the Bark, or alone, it is more efficacious than that valuable Article. I think Amonia is adapted to those cases of Intermittents where there is a tendency to Typhus; & where the Bark in conjunction with the Cascarilla is indicated. Those cases then of Fever whether remitting or more continued wh

have a tendency to Typhus, call for the use of our Med: —

Huxham & Pringle used it in the Camp & Jail Fevers. Lucain used the Vol: Alk: with success in Putrid Petechial fevers where the Pulse was tremulous & intermitting but soft — he combined it with Castor. Altho' it is often a most important med: in the management of such fevers, yet it has often proved injurious. It has been administered too indiscriminately in all stages of fevers. It is not adapted to the first stage of Typhus where the symptoms are febrile, & inflammatory action exists in the brain: — In the 2d & 3d stages, where there is a prostration of strength, subsultus tendinum, the pulse not tense but feeble, & a dry skin, in these cases the Vol: Alk. is our best remedy. It has been much used in the 3° stage.

Writers have not been sufficiently

precise in their directions, as to the time of their exhibition in Intermitting & continued Fevers. I give it in the Intermissions or Apyrexia only, for even in the 3d stage, we find twice in 24 hours the periods of exacerbation occurring; at wh time we shd be sparing in Stimulating Med:. It is then proper to exhibit it only during the Intermissions or Sub-Apyrexia.

In Genuine Pneumonic Inflammation. To this the Vol: Alk: is not adapted, but there is a Species of it in wh it is one of our best remedies. There are Stages of Common Pneumonia in wh I have found the Vol: Alk: to be the best Med: wh we can employ. The Stage I allude to is that of wh I gave you an account when treating of Serpentaria. It is that Pleurisy in wh Typhoid Symptoms early discover themselves, & wh occurs in Marshy countries, shewing a Tendency to

Typhus, & accompanied with Petechial Carbuncles. — It is much increased by Vs. the Pulse is feeble & irregular, there is prostration of strength & subsultus tendinum after using the lancet. Blisters, wine whey, Opium, & Vol: Alk: form the proper mode of treatment; the last is beneficial not only by its stimulating, but by its expectorant qualities. Pringle gave it in Pleurisy & Peripneumony combining some expectorant oily med: with it. —

In Puerperal Fever after the inflammation is subdued & it tends to Typhus, Vol Alk: is proper —

In that obstinate permanent Hoarseness wh succeeds the Measles, the vol: alk: is one of our best remedies. I have used with the most marked advantage, a watery solution of the Carbonate of ammonia combined with G: Arabic & Sugar.

In Pertussis. The Literary Journal of

1733 mentions several instances of its efficacy in Pertussis. I have never used it in this complaint.

In Dysentery. Martin speaks in high terms of the efficacy of Vol: Alk: in Dysentery, he says it mitigates the gripes, amends the appearance of the blood, & produces a salutary sweat.

In Rheumatism It has been used in G: Britain it is said with much advantage. It enters into the composition of the Vol: Tinct: Gum Guiac: so much celebrated in Rheumatism, & this Tinct: owes much of its efficacy to the Vol: Alk:. I have used the Ammonia with advantage, & in some cases it is more beneficial than any other med:. It is adapted to all chronic cases, & where the evacuent plan has been used. I have given the watery solution of the Carbonate of Ammonia to the extent of 30 or 40, 50 & 60 gr. in 24 hours.

In Hemiplegia I have employed it here & I think with advantage. From the great affinity between it & Chronic Rheumatism I think it must be useful. —

Palsy. It is adapted to Palsy in wh I think it has been too much neglected, tho it is not as has been said, an infallible remedy.

In Irregular Gout. When Stimulating Med: are to be used. Vol: Alk: may be employed with great advantage. Dr Huhn says he has employed it with greater advantage than any other Med: both in the form of Vol: Tinct: G: Guiac: & the watery solution. — It has been used in cases of Dropsy in the form of a Bill — I cured one case of Anasarca, complicated with Hydrothorax with Vol: Alk. —

In Bites of the Viper & Rattle Snake In these cases the Vol Alk has been used both in Europe & India (see Asiatic Researches) It has been employed both externally & internally

when taken internally —

Sage, a French Physician, calls it a true specific against the bites of the Viper & all venomous Serpents — & even Bees Wasps & Pismires. There were some experiments published in India wh appears to render it a specific. In our own country Dr Ramsey of So Carolina published a paper on its efficacy in bites of the Rattle Snake, but these circumstances did not come under his own notice; & they are, to me, by no means satisfactory. — The Abbe Fontana says, that in his hands, it not only proved of no advantage, but evidently accelerated the effects of the Poison. He experimented on Sparrows, & tells us it was altogether useless either when externally applied, or taken into the Stomach. When we reflect that the venom of the viper acts by producing violent inflammatory symptoms we shd suppose a priori that the stimulus of the Vol:

Alk: wd be prejudicial –

These Bites, after convulsions & bloody urine have come on, often terminate favourably. Thus a rabbit wn I caused to be bitten by a Rattle Snake, was ill for 3 days, & was seized with Convulsions & bloody urine & it afterwards completely recovered without the assistance of any remedy. And had the Vol: Alk: been here given the recovery wd certainly have been ascribed to it. The power wn Nature has, or if you please, the tendency of the Constitution to get the better of bites fm venemous Animals, is a fact wn has made a strong impression on my mind. Darwin & Fage both assert that the Vol: Alk: is efficacious in such bites. One of Tissot's cases seem to prove its efficacy.

It has been thot useful in Rabies Canina, but I do not approve of it

It has been used externally & intern-

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ally in Ulcerous affections, & even in Cancers. I have never employed it for this purpose.

External Use. —

In 1780 Martini published an acct. of 4 cases of Cancers wch. he cured by the Caustic Vol: Alk: — It was internally given, & externally applied by the Professor of Leyden in cancerous Ulcers. —

Houfland used the Spt Sal: Ammoniac in the dose of 15 drops 3 times a day in a Scrophulous Cancer of 3 Months stand.g wch he cured by it. —

Hitherto I have spoken generally of it without mentioning the preparations. — It is often given in a Pill or Bolus with some Conserve, & in Typhus & such fevers, the solid form or Bolus (with some conserve, & in Typhus & such fevers, this Solid form, or Bolus) is the best way of exhibiting it, its effects being more permanent. My favourite method is to rub down the Conserve

crete Vol: Alk: with a portion of G Arabic in the follow^g manner. Carbonate of Ammonia or Concrete Volatile Alkali ℥j

Pulv G Arab — ij or ℥iij

White Sugar — — — ℥ij

Aq Font — — — ℥8 or 10

The G: Arab: sheaths the Acrimony of the Vol: Alk: & you are enabled to exhibit it in larger doses. Cullen had no idea of such a method of preparing it. If combined with G: Arab: or white sugar 40 gr^s may be given without producing any heat in the fauces. Cullen places it among the Antispasmodics — He says the mischief arising from its heating powers, greatly overbalances the advantages derived from its expectorant Qualities. He says also that musk is the most powerful Antispasmodic we are acquainted with, & a most stimulating Article. —

Musk. —

This is one of the Animal substances used in Medicine — It is the produce of an Animal of the deer kind, the Moschus Moschiferus — It is a native of different parts of the Old World, Siberia China, Thibet &c, & not found in Europe or Asia — Its favourite abode is in the tops of the loftiest mountains covered with Pines. The Sac or Ovum containing this unctuous brown matter is found about the middle of the Abdomen of the Male. The farther we go to the South, the greater the Secretion of this fluid. — As soon as the Animal is killed, the Sac must be cut off, & a ligature passed round the neck, where it remains until it becomes dry & fit for sale. It is often adulterated, in fact many of its receptacles contain pieces of lead to increase its weight It is of a bitter, fragrant taste. It is inflamable & retains its odour for some time Musk is one of the most odoriferous substan-

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ces in Nature, of a dark brown colour & bitter taste – the Odour is so violent that it has been known to force blood from the ears Eyes & nose of those who have inhaled it. –

Its Chymical analysis is not yet sufficiently investigated, but resin, Gelatine, & a certain saline matter are its component parts When triturated with alkaline salts, it gives out the smell of Vol: Alk. – It is nearly allied to Camphor. —

Musk is wonderfully diffused thro' the animal world – I have discovered the odour in the human species, in Rats Moles &c —

I know little or nothing, certain, of its effects on the pulse in a healthy state. It increases the fulness & frequency of the pulse, produces a mild Diaphoresis & not much heat; & afterwards throws the person into a gentle sleep. –

Musk has been used in a great number of Diseases. Pringle has used it with

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advantage in Gout in the Stomach, he says that Opium itself does not produce relief more readily

I have used it frequently in retrocent Gout when it affected the head & Stomach, & think it of more service than almost any thing else. This med. ought be given in very large doses wh may be diminished as the Spasms go off. Dr Desporter relates the case of a lady cured by musk after she had taken fetid gums, & used the Cold bath without advantage. She began it in pretty large doses, & increased so as to take ℥ss every 4 hours after she had been using it for a short time. She took the first dose immediately before the spasms came on, & they were considerably checked, & after some time she was perfectly cured

Cullen has found it very effectual in this kind of Gout when given in large doses. — Dr Hillary found it successful in large

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doses when combined with Opium, these medicines combined are much more effectual in this state than either alone. It will be proper to discontinue these med: until some time after the Spasmodic affection of the Stomach ceases. —

In Tetanus. Dr Hillary often prescribed it in large doses in Tetanus, in combination with Opium. — Dr Heberden has also used it in the same way with advantage. —

In Hydrophobia, we have derived it from the Chinese who combined it with Cinnamon. —

℞ Musk — — grs 16
Cinnamon — ʒj M. They

gave the third of this to Adults at first, & after a few doses are taken, they increase it so as to give the whole for a dose. It produces a suspension of the Symptoms, & refreshing sleep, as well as taking off the dread

of water. — I cannot deny the effect of Musk in Hydrophobia. Dr Hillary has mentioned some cases where the Patient was ad de liquium Animi, cold water was thrown upon them; & after they were treated with large doses of Musk combined with Opium — he says it is a good preventative. Lentin says 4 grs of Musk has proved beneficial

Lintin a German Physician has given it to advantage in doses of 4 grs In Asthma

In Pertussis we find it recommended — Hales did not approve of it

In Colica Pictonum. Dr Hillary speaks of it in high terms. Dr Cullen says combined with Opium he found it more beneficial than any other Med:

I have seen a cure from the use of this Med: & no doubt shd have seen more had it been given in sufficient Quantity. —

Mania. Cullen says Mania is much

* the disease was arrested

relieved by it. – Hillary says it is of immense advantage

In Subsultus Tendinum accompanying Typhus & Nervous fevers &c it has been found beneficial. Dr Cullen says that it not only relieves these Symptoms but removes the fever itself. Mead gave it in Jail Fevers, he preferred it to all others.

In Confluent Small Pox Musk has been recommended. –

In Gangrene & Mortification it has been lately employed. There is a case related by Dr Simmons of Manchester Eng: where Opium, Wine, Bark & Ether with external applications have failed Musk was given in doses of 10 gr 3 times a day with an equal portion of Ether, & the patient recovered. I have never used it myself but think it may be a valuable remedy.

Few med: are more adulterated than Musk. Hence the variety of Opinion res-

pecting it – I think with Dr Cullen that the smell is the best criterion of the purity of Musk – That ch is only is most indifferent – Genuine Musk is generally mealy & crumbles between the fingers – Genuine Musk is I think a most powerful medicine It is often adulterated with the Blood of Animals & many other things

With respect to the dose, Musk is only to be relied on when given in large doses. Dr Wall says it is rarely effectual unless given in doses from VI to X grs & often repeated Cullen says it ought be given from 10 to 20 or 30 grs & often repeated. –

Hales in 1783 endeavoured to prove that it was entirely inert

Artificial Musk was

first recommended by Bergrave, it is much employed in Germany, & the form of Emulsion is the best mode of exhibition.

The process for making it is to pour ℥iijs of Nitric acid slowly (drop by drop) upon ℥j of recent oil of amber, after suffering it to stand 24 hours - a yellow substance was found on the top, wh is washed with water until it is freed fm the acid - It has been said to be of advantage in Epilepsy. I never used it. - & in Nervous Diseases

Mr Baley says that no Med: is better in Whooping Cough. It is given in emulsion 10 or 15 gts of it being triturated with a few almonds, & afterwards a few ounces of water are added - Of this two tablespoonfuls are given every two hours to a child. -

This Med: has also been given in Spasmodic inflammat^n

<u>In Diabetes Mileitus</u> we hear of its good effects

Of the great class of Incitantia I shall make several Subdivisions. Next I shall treat of Narcotics, Diuretics, & some other of the general classes of Dr Cullen as sections of the class of Stimulants – I proceed now to speak of Narcotics wh I shall likewise divide into 3 Sections, viz Papaveracea, Lucido or Salavo, & Umbilato or Umbillifero the only Article wh comes under the head of Papavera is Opium. –

Opium by Dioscorides was termed Mecoinum.

Opium

This I formerly placed at the head of the class of Stimulants, not however because I considered it as the most powerful or diffusible of them, but because I believe it, as it certainly is, the most important stimulant we employ in practice. –

Opium is the produce of a particular species of Poppy wh Linnaeus has called Papa-

ver Somniferum. because among other qualities it has that of producing Sleep. It is found growing in Asia; in Egypt it is used in large quantities by the Mahomedans, & produces the same effects as wine in the use of wh they are forbidden by their religion to indulge —

It is called Thebaicum because it came fm Thebes Originally, at present however it comes fm Smyrna, Persia, Arabia & in cakes of 4 lbs

Authors differ very much in respect to the Mode in wh Opium is obtained fm the Papaver — Some are of Opinion that it is done by boiling the leaves & head of the Plant. — Dioscorides says that the heads of the Poppy are wounded, & Pliny says this is his opinion

The Opium is really obtained by making an incision into the head of the Poppy with a fine edged Knife — this is done in the evening the juice wh flows out is the next day

* When these incisions are made with glass the Opium is of a clearer Colour

inspissated & forms our Opium. x

Mr Carr who resided at Bahar in the East Indies for some time, tells us that the Poppy seeds are sown in Quadrangular Areas, the plants being 6 or 8 inches distant from each other, that they are supplied with water till they get to the height of 6 or 8 inches distant from each other when a Compost of dung is put around them. At sunset two incisions are made into the head of the poppy, one below & the other above, so as not to penetrate the seeds. The juice which exudes is collected in the morning in clean vessels & exposed to the sun until it inspissates. This is the purest Opium. —

Opium is often adulterated with an extract obtained by boiling the whole plant, by being mixed with the Capsule of the Poppy & other extraneous matters. It is generally of a very dark brown colour, but this is said to be owing in a great measure

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to the incisions being made with a knife, a part of the Iron being thus combined with the Juice - Perhaps we do not often receive it in a pure state. -

There are other Species of Poppy besides the Papaver Somniferum, every Species abound with Lactescent juice, but it exists in a greater quantity in the Somniferum. It has a strong & to most people a disagreeable smell, but to me it is the most pleasant of all odours. - The pure Opium has a more bitter & Pungent taste than the Common, & leaves a sense of heat in the Mouth Fauces & tongue. It is said to be adulterated sometimes with the Lactuca - Hemlock &c. & Mr. Carr says with Cow Dung -

From some experiments of Dr Crump, it appears to be less impure than is generally supposed - he says that out of 12 parts of the pure unadulterated Opium, he procured from 2 to 2 1/2 feccalent Matter - And out

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of 12 parts of the common Opium of the shops, he got only from 3 to 3½ of this Feculent. —

(The Mahometans use it instead of wine wh. their religion forbids them to use)

The Opium imported into this Country, comes from Persia & Egypt. But as good Opium has been made in this Country, as we can get from Asia. It is now made on the North River & in Rhode Island —

Before Opium was used as a Med: the poppy was cultivated on acct. of the Oil wh. may be extracted from its seeds. This Oil was used as commonly as the Olive Oil is now among us. The seeds do not appear to possess any of the properties of Opium

I proceed in the next place to give an acct. of its effects upon the living system in a healthy state, & first of its

External Application

When opium is applied to the Eyes to the In=

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ternal surface of the Nose, or of the Urethra; or any other part from wh the Cuticle has been removed it first produces pain, & some degree of heat & inflammation; afterwards it diminishes the sensibility of the parts

Dr Crump prepared a solution of it in the proportion of ℥j of Opium to ℥ij of water, & poured a little of it on the eye pain & inflammation together with a discharge of tears were the effects produced — Upon the other eye he poured Spirits & water, but the effects tho' nearly similar were less considerable. — Laud: applied to the Schneiderian membrane proved irritable & excited sneezing: & Powdered Opium acts very much like snuff inducing titillation, sneezing &c

Accordg to Dr Crump a solution of Opium applied to the Uterus excited a burning sensation; & in the urethra heat & pain. These stimulating effects however are not so great as to preclude its use in injections in Gonor-

*Having scraped the cuticle off of the wrist Dr Crump applied the aqueous solution, & found it to produce heat & pain, but he says altho' it produces these effects on the excoriated parts of the body, yet on the cutis it produced no effects. Bergius however entertained a contrary opinion & believed that it acted as an anodyne. But Dr. Crump wore opium bound on his hand & arm for 18 ~~months~~ hours without any sensible effects. Several other authors confirm the result of his experiments - but many others contradict them. —

* Mating

rhoea, or in Collyria & for I have used it without experiencing any inconvenience; it sometimes gives considerable uneasiness but by no means sufficient to exclude its use. In Gonorrhoea I have used it combined with Plumbum Aceteum.* Dr Lind tells us that he relieved the Spasms of Tetanus by applying Opium & Camphor in the form of a Poultice to the soles of the feet, wh always relieved when the poultice was taken off —

Dr Alstons opts agrees with Dr Crumps. Dr Murray says that externally applied it is inert; but Dr Monro Dr Lind & Mr Saw assert that it does produce effects by being externally applied & Dr White of Edinburgh says that when it cannot be employed internally, it may externally, to the belly & Stomach, with advantage. Dr Harden says he has seen the most beneficial effects from externally applying Opium

in the form of a liniment to the Stomach in relieving Pain

Dr Cullen says that it acts not only upon the parts to wh it is immediately applied diminishing their sensibility, & ~~thereby relieving their pains~~, but that without being communicated to the Sensorium, it operates to a certain extent on the nerves of the part adjoining those to wh it is more immediately applied, diminishing their sensibility, & thereby relieving their pains. Thus a plaister of Opium has often relieved the toothache when applied to the temples. He thinks that it may be used either in Plaister or Poultice, but prefers the liquid form, either in water, or Proof Spirits, the latter of wh he thinks the most eligible — He says that this extracts better the volatile parts of the Opium upon wh in his opinion, the action of it in a great measure depends. —

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Dr Jackson of this University has made several different experiments with a view of illustrating this subject — he wore two Opium Plaisters to the soles of his feet for 18 hours, without any effect — Not contented with this he applied an Opium plaister to the Epigastric Region, & suffered it to remain there until the afternoon, without its producing any effect on the Cuticle. —

From my own observation, I am convinced that Opium externally applied does produce manifest effects. In a Patient of mine — (Mr Rittenhouse in his last illness) I applied a plaister of Meal & Opium wh. relieved him much — In fact the oldest Physician in this City has used it externally) who was afflicted with Pain in the Stomach & Abdomen, every time that Opium was applied during the Course of several years, relief was experienced, together with the usual Concomitants of our Med: Constipa-

tion & Costiveness — I have also seen Laud: rubbed on the temples to produce the same effects that result from the internal use of it

I have no doubt however that too many effects have been ascribed to the external application of Opium, tho I am confident it does produce some effect. —

In Europe, this mode of applying it has excited considerable attention. In the form of an Ointment ℥j of Opium to ℔j of simple ointment produced sleep in a boy who was very restless; & an Idiot from birth — One ounce of the Ointment contains 6 grs of Opium

Case 1st A Child who was hurt. The Cuticle was removed — an ignorant — used Clothes of Laud: brot on stupor, & the Child died. —

Case 2d A young woman had been blistered on the Chest for a Pneumonic affection wh did much good; & after this a friend ap

plied an ointmt of Opium wh caused a Stupor wh was relieved by a drink of Milk & water. —

Supposing that Opium does act externally, in what way does it act? Is it upon the Nerves, or is it absorbed & taken into the Circulation?

Dr Chunge thinks that it penetrates the skin & acts on the Nervous System. I believe that it acts on the Surface of those parts of the body to wh it is applied, & thus produces its effects upon the different parts independantly of absorption. Even Laudanum I believe is not absorbed. Dr Cullen thinks that it is transmitted thro' inorganic pores — this is very different fm absorption

I do not believe it is taken up by absorption & carried into the System of the Blood-vessels. For tho' absorption does certainly obtain in fish, serpents toads &c there is no cer-

x 1st Qu. it ~~increases~~ respects the vital Func-
tions

tainty that this process ever goes on in men for the skin of frogs & that of man are very different. — A Rattle snake in my possession lived 21 months without eating or drinking. I always observed it appeared fullest when there was much moisture in the air. In fish, the Lymphatics no doubt terminate extra Cuticula. There can I say be no doubt but that these Animals are capable of receiving into their Systems substances taken up by absorption. But whether in this way they could be conveyed into the living human body is very doubtful

Internal Use

I shall now consider the effects of Opium when taken internally on the Vital, Natural, & Animal Functions.

Opium when taken internally in a moderate quantity into the stomach, increa=

ses the action of the Heart & Arteries. Also the heat of the body, & increases the force & frequency of the Pulse. Secondarily it induces langour & debility. The quickness of the pulse is soon diminished. During the increased action of the Heart & Arteries, the heat of the body is greater, but respiration is not much affected unless large doses are given, in this case all the appearances of Apoplexy are produced when taken in large doses, it produces all the peculiarities of Fever, increases the pulse & impels the blood to the head.

As there are very few points in wh. Physicians are unanimously agreed, so it is with the action of Opium upon the Human body. —

Some say that it diminishes the Pulse while others mention an increase of it the diminution of the Pulse however is a secondary effect. —

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Dr Cullen says that it first irritates the sanguiferous System Dr Boerhaave asserts that it increases the force of the Circulation & Dr Darwin is of the same Opinion, the former seems to have entertained pretty correct Ideas of the Operation of Opium, but it was not even before his time that Opium did possess a Stimulating effect. Dr Brown says that he was the first one who pointed out this as the effect of Opium, but he undoubtedly was not. Dr Boerhaave says that those who are adicted to the use of Opium in Asia & when deprived of it fall into depression of Spirits & even sell every thing they have to purchase it, or resort to the latter as a termination of their troubles. He also informs us that Opium increases the force & circulation of the blood. He says that it acts while it is yet contained in the Stomach, & therefore that it exerts its force upon that Organ, or at least that it need

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not enter into the Course of the Circulation. — He gave a quantity of Opium to a dog, & while the animal was in Convulsions, he examined it & found it yet in the Stomach, & from this circumstance he draws his Conclusions. —

Haler says that the first effect of Opium is to increase the Circulation, unless a very large quantity be given. —

The experiments of Dr Crump are among the latest, best, & most conclusive in favour of the opinion that Opium deserves to be classed among stimulants, he assures us that they were made with the utmost care, & with the greatest attention to every particular wh could influence them, or prevent their being correct

The Natural standard of Dr Crump's pulse was 70 — Having breakfasted at 9 o Clock, says he, I took 1 ℥ of Opium at 12 In 5 Minutes his pulse was increased

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to 74 — 10. 15. 20. 30 40. 50
76. 76. 75. 75. 72. 70 the fulness was also a little increased, & no drowsiness. —

He gave it to a young man remarkably robust & strong, the natural standard of whose pulse was 44. it continued natural for 20 minutes, but in 25 minutes was increased to 50, at 30 min. 52, at 35. 54 — it then decreased, & at the end of 45 minutes beat only 48, from 55 to 60 minutes only 46, & at the end of 90 min: it was down to 44 its natural frequency.

In the afternoon my pulse beat at 70 I took 2 ℥ of Opium, in 5 minutes it was at 74 In 10. 15. 20. 25. 30. 35. 40. 45. 50. 55. 60. 75. 90
at 70. 74. 76. 76. 80. 72. 70. 64. 64. 66 — 74. —
In 20 minutes the fulness increased, & I imagined myself spiritely, in 40 minutes I experienced a languid pleasing sensation, & afterwards nausea drowsiness headache & vertigo — in 3 hours he vomited but continued stupid the other part of the day. when Opium

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produces sickness at the Stomach I have generally found relief from a Spoonful or two of vinegar. —

To me these experiments are conclusive, yet they are not so complete as to leave nothing further necessary. Dr Haller has given us a very striking proof of the stimulating effects of Opium. Upon making use of a Glyster wch contained a large portion of Laud: he always found it to raise the pulse from 75 to 86 & sometimes to 100 — afterwards a pleasing langour. — One gr of Opium, raised Mr Withering's pulse from 76 to 86 in 5 minutes — & that of a friend of mine from 75 to 84 — When therefore you find a contrary opinion urged, against the operation of this medicine, you may infer that they have neglected the primary effects, & have only attended to the Symptoms after the medicine ceased to Operate. — And I think it is on

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this act - that we read so much on the sedative effects of Med: — In such experiments we sh^d attend to the pulse from the very moment at w^h the Opium is taken - the same observation is applicable to experiments of other substances, since many of them act almost instantaneously. Thus the poison of the Rattle Snake has killed in two minutes. —

Dr Bard has written an Essay on Opium in order to prove its direct sedative effects but his experiments are by no means conclusive, as we was quite inattentive to its primary effects He took gr^s ij of Opium, his pulse 71 - in one hour it was at 69, & in 4 hours at 50 - but he gives no act of its operation during the first 35 minutes — I believe however that these experiments of Dr Bards convinced Dr Cullen of the sedative effects of Opium, & induced him to teach this doctrine, tho' before he had

lectured on it as a Stimulant. – I have discovered the Stimulating effects of Opium in my own person, in less than 6 minutes after taking it. –

But – affirms that it not only increases the pulse in frequency, but it likewise increases the Diameter of the Arteries. Opium also increases the heat of the body Martin however says that the thermometer indicates no uncommon degree of heat, but every person who has observed with any degree of attention, must know that the heat of the body is increased. Dr Crump found this to be one of its effects I was myself a few years ago in the habit of taking it in large quantities, & it always produced a dryness of the Fauces, flushing of the face, & a burning prickly sensation in the palms of the hands, & these are all indications of its being a Stimulant. Almost all writers notice the high Coloured Urine

heat & wh follow the use of Opium.—
It has been said to cause an obtuse=
ness of hearing: when taken to the extent of
1½ gr. opium often destroys by causing an
Apoplexy. The Tinitus Aurium wh is so
frequently experienced is also an evidence
of its increasing the heat of the body.—
And upon the examination of the bodies
of those who have died fm taking of Op=
ium, we find the bloodvessels of the brain
Turgid & distended with blood.—
I shall say a few words of its effects on the

Natural Functions.—

In large doses it generally impairs the
appetite, creates langour, Nausea, & some=
times vomiting. The intestinal discharge
is diminished, but the other secretions
are increased.—
To a person unaccustomed to it 1 gr will
sometimes wonderfully derange the
Stomach, impairing digestion & its ef=

* & this is the most common inconvenience resulting from it

fects of suppressing the appetite are so well known that the people of the E Indies once during a famine wh prevailed there purchased it at an immense price for this purpose. Its effects in producing vomiting, & impairing digestion are generally known, but it has also the contrary effect of producing good digestion when used with caution, but those who use it with this view are ultimately sufferers by it. —

By lessening the intestinal discharge, it is often a source of much distress; but in some cases it acts as a laxative. It is used with this view in Colica Pictonum in Vienna. & has also a remarkable effect in producing a discharge of Flatus. —

I believe that Opium act as a Purgative when there is great torpor prevailing in the sanguiferous system, & I think in this case it acts as a stimulant. — I knew a Gent: whom it always purged in doses

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of 25 or 30 gtt; but if at any other time he was affected with Diarrhoea, 8 or 10 drops of Laud: wd Stop it. —

Opium is a Carminative. —

Physicians entertain different opinions of it as a Diuretic, in the 17 Century it was used in Abdominal Dropsy I shall speak more of this hereafter — Mr Donald Monro & Dr Mason gave it in Dropsy & Dr McKinnis observed a diuretic effect from it when giving it to his venl patients. Dr Haller did not think it Diuretic, he tells us the Saliva & mucus of the nose was diminished. I think it evidently increases the effects of Digitalis Henbane &c

It is also said to act as a Sialagogue Dr McKinnis says he has known it increase the flow of Saliva — Other Med: however besides Mercy produce this effect. It has rarely acted as a Siala-

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gogue except in Syphilis, when Patients generally, tho' often ignorantly, have taken merc^y in some shape – I think therefore that those who appear to have been salivated by Opium must have previously taken Mercury. –

Opium also increases the perspiration at the same time that it does not proportionably lessen the Pulse; this effect is generally accompanied with, or preceded by an Itching or prickling of the Skin, w^h sometimes continues for 2 or 3 days; & w^h may be generally be removed by drinking a bowl of warm tea or wine whey – this will assist its Diuretic effect, & palliate the itching. This itching is I think occasioned by a certain action of the nerves of the Brain w^h is bró't on by the irritation of the Opium

Opium has often produced a Miliary Eruption on the Skin; & in many cases

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Boils. —

Dr Haller informs us that the smell of it is perceptible in the perspiration of those who take it, & this wd lead us to believe that it enters into the course of the circulation wh indeed is my opinion, tho' the medium of the Stomach. —

A nephew of Dr Boerhaave gave Opium to a dog, & on killing him found a preternatural accumulation of Bile in the Duodenum & Gall Bladder, & Ductus Coledocus - the liver was also turgid with Bile. —

Dr Darwin says that opium & Alcohol increases the Secretions, & absorptions, but that the former appears to stimulate the excretions less than the latter, because tho' after taking it, the secreted fluids are in larger quantities yet they are taken up by the absorbents & therefore appear less, but the excretion

fm the skin is taken off by evaporation & before absorbed —

The Larva of Insects feed on Opium. I have fed them on it alone for some time & they were nourished very well. — This goes some way to prove it a nutrient. I think it proves at least it is not a poison.

On the Animal Functions it produces the follow^g effects. In small doses it generally occasions a pleasing hilarity of the mind, & an increased flow of Spirits In large doses it produces intoxication & delirium; generally the delirium fm Opium is pleasant. Here the Analogy between Opium & Spirits is very great. It also occasions a Priapismus, & a propensity to Venl pleasures, & this even in old people. After some time these effects subside & are succeeded by those of an opposite nature — Weakness & Fastidiousness, insen=

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sibility to external impressions, & a disposition to Sleep; & if the dose has been too large - Tremors, Rigors, Vertigo, Headache, Tinnitus Aurium, & Convulsions are produced. Dr Wilson says that generally, tho' not always, the Convulsions resemble those of Tetanus. — Such are the common, tho' not uniform effects of Opium. for death has been brot on by the use of Laud: without being preceded by Convulsions - I have seen two cases of this kind. — It is said by some Authors that when these Convulsions are produced by an overdose of Laud: they are of a peculiar kind. —

Some writers doubt whether it produces any exilerating effects, but it certainly does — Dr Ramsey, one night wishing to Study & feeling Sleepy took 30 drops of Laud: wh made him lively until the

approach of Morning, when he began again to feel sleepy he then took 90 drops wh. induced hilarity, & this was so much increased as to make him leap & dance finally a mist came before his eyes & he became drowsy again. Dr Crump says he has seen it in large doses produce an increased flow of spirits, & an enlivened imagination, wh. terminated in drowsiness I have often used it myself & am well convinced of its acting in this manner. Its effects are very similar to those of the best wine. —

Its effects on children at the breast are very similar to those of Adults I have seen an infant of 3 or 4 months old at the breast in a state of pleasing intoxication from Opium

It is much used among the Eastern Nations, the Turks & Persians to inspire them with Courage, & hilarity of genius, & its effects with them is so well known that they wd laugh at hearing a Med. Professor doubt

whether it produced this state of the mind
They take it in battle, & on the occurrence
of Misfortunes, to dispel thoʻt & care. This
custom, together with that of using Ardt-Spt-
ts is so prevalent among other nations has
deprived the world of many of the most va-
luable Statesmen, Poets, Physicians & Philo-
sophers. —

I come now to say something of the enor
mous doses of Opium that have been taken
The Soldiers of Hindostan smoke it with To-
bacco, & it is no uncommon thing for them
to be intoxicated by its use, especially just
before going to Battle, & when they intend per-
petrating any Malicious act. —

Dr Russel informs us in the History of Aleppo
that the greatest quantity he ever knew was
Jiv. in one day. But one writer mentions
Jx in a day — he says that it is less em-
ployed than is generally imagined by the
Turks, they have various preparations of it —

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Gascon informs us of a man who took ℥j in 4 hours - & Dr - of this City informed me that a servant girl of his used 16 or 17 ℥ in a day to relieve the pain of a cancer in the uterus. —

Sir John Sharden informs us that it is used by the Persians in various shapes. Sometimes they use the juice of the poppy made into pills of one ½ ℈ each, or drink a decoction of it. — When a Persian finds himself in a distressed situation, he takes a piece of Opium of about the size of his thumb & swallows it in a glass of vinegar - this throws him into a Hilarity, & terminates in Death. — Mr Oglevie once ask'd me what doctrine I held respecting Opium - I answered that I did consider it as a Stimulant - he told me that he was astonished that any other Idea could be entertained of it, that he was accustomed to the use of it, & that it produced the same effects as Brandy

A woman 36 years of age swallowed 36 grs of Opium, in 5 or 6 hours she fell into a profound sleep - she afterwards awoke & swallowed some vinegar; her respiration was stertorous - she took Ipecac: to no effect: in 11 hours she died - On dissection the inner surface of her stomach was inflamed & partly corroded - it contained the vinegar & Ipecac: but the opium was dissolved. — The inflammatn had extended to the intestines, & the small ones had put on a gangrenous appearance. The joints were very flexible, & the muscles entirely relaxed; the small intestines much relaxed. — Nothing preternatural was observed in the Brain, & the veins did not contain more than their usual quantity of blood. This is a most interesting case. —

There is a very great Analogy between Opium, Wine, & Acidt Spts — This has been

& impairs the appetite &

noticed by Boerhaave, Brown, & many others - Opium in small doses produces the same effects as wine in large quantities Wine increases the force & frequency of the Pulse, augments the heat of the body elevates the Spirits, gives a propensity to venl pleasures, produces intoxication Delirium &c - It is also Diuretic; & by long use it reduces both body & mind - All these effects are likewise produced by Opium. - Wine does not perhaps resemble Opium in producing Constipation, except it be good red wine

Professor Murray does not think the analogy to be very great, he says that Opium does not increase the secretions but I have shewn that it does. They have both nearly the same effects upon Maniacs, & are generally injurious. Mr Lauri has related a case of Mania wh Opium made most furious, whereas wine

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did not; this however proves nothing; because Opium is frequently given in Mania without producing this effect — & its effects are different in different persons, & even on the same person at different times. — I am of opinion that in most Maniacal cases where Opium is injurious, wine is so to, & vice versa.

The arguments then in favour of Opium as an Excitant are as follows. Its taste is pungent & heating; when poured into the eye in a liquid form, it produces heat, pain, & increases the secretion of Tears; when introduced into the Nostrils it produces sneezing &c. Injected into the heart of Animals after it has been taken out of the body & ceased to pulsate, it has produced action. When taken internally, it increases the fulness & frequency of the Pulse, & the heat of the whole System. It increases the secretions by the skin & kidnies; excites a disposition to Venery, &

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gives temporary pleasure to the mind & body. These circumstances entitle it to the appellation of Incitant

It is not only in health that these effects are produced, but likewise in a morbid State of the System, & not only by Opium but by Wine, Camphor, & other Stimulants; but none are so successful as Opium

When given before an expected Paroxysm in the Intermittent Fever, the fit is often suspended; but it sometimes fails, & altho the Cinchona is much more feeble in its operations, it is much more effectual in this respect. In the low State of Typhus Fever, accompanied with Subsultus Tendinum; & in the Confluent Small Pox when the System is debilitated, Opium is indispensable. Dr Sydenham used it with a view to suppress & raise the powers of Nature. Dr Haller says there is no difference between the action of Opium & Alcohol. Dr Darwin

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has placed it at the head of his incitants thinking it to be the most powerful stimuli. — Prosper Alpinus has remarked that the Turks who chew Opium, always become languid & torpid when in want of it; & could only remedy it by large draughts of wine with pepper infused. When you wish to wean persons from the use of Ardt Spts, opium supplies their stimuli. These observations shew the Analogy between the effects of Opium, Wine & Ardt Spts.

Opium is one of the best med: in cases of Mania induced by intemperance in drinking. It is also one of the most valuable med: that we use in Atonic Gout. — Dr Cullen tells us he has given it in doses of 10 grs twice a day — he says that genuine inflammatory Gout in the extremities is always preceded by an affection of the stomach — But this, by no means always the case. — In genuine inflammatory affec

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tions, particularly at the commencement. Opium like other Stimulants is injurious, if it was a Sedative, it wd do as much good as V.S. in such cases. Dr Young of Edinburgh says that it is injurious in all cases where bleed.g is necessary to cure the disease. These observations are true with a few exceptions. As in Nephritis where the pain is great it is necessary to bleed. —

Opium seldom does harm even before V.S. in Pneumonia, but always in such doses as to produce its Sedative effects. —

Another case is Acute Rheumatism, I have always made it a practice to give Opium every night at bed time, but with a view of its Diaphoretic effects, & always in the form of Dovers powder. —

Opium consists of 3 principles
Resin, 4 parts. Narcotic & astringent
Gum 4 Do. Narcotic & Bitter
Feculent Matter 4 Parts in 12. — The

Gummy part is soluble in water, the Resinous in Alcohol, & the Feculent matter not completely soluble in either. —

Opium is said to contain a peculiar principle, the Principium Narcoticum, on wh. much of its virtues are said to depend. —

In pains fm excess of motion I am of Opinion that Opium is very Pernicious; but in pains fm defect of motion wh. are generally attended with cold stiffnesses & Opium is beneficial, & relieves the pain sooner than any other med: we can employ. —

The most plausible argument against Opium as an Incitant, is derived fm its relieving pain, but this when attended to with due care will have but little weight. — It wd seem then that whatever excites warmth in a part shd give relief. — Those called nervous pains, & wh. are often succeeded by Convulsions, in such cases,

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Opium must be exhibited with caution, & in small doses, & much less will be found efficacious than after it has once failed. —

Does Opium never give relief in inflammatory pains? If it does in such cases does it not follow that it acts as a Sedative, and as a Cordial or Incitant? — I answer, it does; but no relief or sleep is obtained until some time after the Opium has been taken. It first stimulates the System, & produces all the effects already enumerated, & afterwards it induces Torpor, like drunkenness fm Spts — & during this Torpor whether it proceeds fm Opium or other Stimuli, the system is much less irritable or sensible of its misery. When it is given to relieve pain accompanied with inflammat^n its first effect is to increase it, & sometimes to such a degree as to produce mortification, or death of the inflamed part. —

Upon the whole, perhaps the best me-

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thod of relieving the pain & inflammatn is by blistering, purging, & low diet, as it is attended with an increase of heat of the whole System, & other symptoms of increased morbid action. — But on the other hand nervous pain is attended with a weak pulse, cold extremities, & other symptoms of debility, & in those cases Opium first increases the excitemt diminishes the pain, & removes wakefulness. If the dose is increased, indirect debility is the consequence. The operation of Opium is also more sudden & diffusible than other Stimuli; it also ceases more suddenly & leaves the System abruptly in a State of Torpor; but on the other hand, other Stimuli cease to act more gradually, & in this case the System is not so sensible of its Torpor as when induced suddenly.

If there are other more Stimulating med: why wd not the same effects be produced by them? I say there are, but all Stim =

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uli are not Anodyne, a certain degree of diffusibility is requisite, wh. Opium possesses over all other Medicines. The effects of Stimuli is not always in proportion to their quantity or power, but depend much upon the effects of those acting on the System immediately before its administration. — This is well illustrated by remaining for some time in a dark room where the Stimuli of light is but feeble, & afterwards going into a room only moderately illuminated, or not more than the eye has been ordinarily accustomed to, the light will be almost insupportable. Whereas if the eye had been previously exposed to the rays reflected fm a Mirror in the Sun, it wd have not have been in the least affected

From these remarks, the follow.g conclusions may be deduced, concerning the operation of Opium. —

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I It is unquestionably a Stimulus

II Opium stimulates powerfully, & rapidly diffuses itself thro' the System. —

III The Strength of the System is readily & easily exhausted by it

IV As its principal effect is to increase the Strength of the System, the consequence is the removal of pain & debility

V As it stimulates the System rapidly, it soon exhausts, & leaves it in a state of Torpor or insensibility; the effect of other Stimuli will be much less than if they had been given before it. The greatest objection to Opium is its leaving the System in such a state of Torpor. —

We proceed in the next place to speak of the diseases in wh Opium has been given. —